COLONY OF MAURITIUS

ANNUAL REPORT

ON THE

DEPARTMENT OF AGRICULTURE

FOR THE YEAR 1929

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No. Rae 1654
56/30

THE HONOURABLE THE COLONIAL SECRETARY,

I have the honour to submit the report on the Department of Agriculture and on the agricultural conditions in the Colony for the year 1929.

PART I

AGRICULTURE AND INDUSTRIES

SUGAR

The Colony's production of sugar, which is the principal crop, was for 1929, 238,035 metric tons (234,276 English tons) distributed in grades as follows :—vesou 23.9% ; raw sugars 75.2% ; low sugars 0.9%.

This production would no doubt have been higher if the fields had received in time the usual care that is bestowed on them but owing to the crisis caused by the low prices of the preceding crop and the unsatisfactory prospects this could not be done, the planters, the small ones principally, having been faced with considerable pecuniary difficulties.

Fortunately the difficulties were alleviated to some extent though rather late, by means of an assistance from Government in the shape of a loan of Rs. 6,000,000 repayable during a certain number of years by means of an export duty of 50 cents per 100 kilos.

Owing to the altered conditions of the sugar market, manufacturers found it more advantageous to produce a larger proportion of raws than heretofore. The year before, for the same reason the production of raws reached 27.3% The total tonnage of cane ground approximated to 2,195,400 giving a mean extraction of sugar of 10.84% of cane.

The area under cane cultivation at the beginning of 1929 was 157,700 acres, a figure practically identical with that for the previous year. Estate plantations covered 83,760 acres, the rest being made up of planters' canes more than half of which belong to Indians.

Little change was brought during the year to the existing machinery on estates. Importations in this respect reached Rs. 752,000. A sum of Rs. 8,000 was contributed by the Sugar Industry Reserve Fund for the purchase of machinery for experimental purposes. The apparatus ordered have been installed at Mon Désert Factory in a central locality where they can be inspected by all interested. In relation to tramway material the falling off in importations was considerable : Rs. 156,000 in 1929 as compared with Rs. 411,000 in 1928.

With regard to the irrigation problem, mention should be made of the mission entrusted to Mr. E. Lesur, an Officer of the Department for the purpose of studying the methods employed in Hawaii. The application of these methods in Mauritius has been started successfully.

This question has been the object of special studies by this Department in view of the Irrigation Scheme of the Northern Districts of the Island.

For this purpose extensive mechanical analyses of soils of the whole northern area have been performed with the object of determining exactly the nature of these soils and the possibility of placing them economically under irrigation.

The Hawaiian methods have been put into practice by Mr. Lesur since his return in Mauritius and have proved to be more advantageous than those practised hitherto, in that they require less water for a given area and at the same time allow substantial savings to be made with regard to labour.

In relation to insect pests of the sugar cane, the outstanding factor continues to be *Phytalus Smithi*. Over 250,000,000 beetles were destroyed during the year and nearly 100,000,000 larvæ captured. The total cost of the campaign against this pest exceeded Rs. 110,000. Experiments have been continued during the year, in relation to the life history of the insect, its ecology and natural enemies as auxiliary means of control.

As regards fungoid diseases of the sugar cane, the most important continues to be Leaf Scald to which White Tanna, which occupies 50% of the cultivated area, is peculiarly susceptible.

The extent of the disease is not, however, greater than in 1928. In this connection Professor Ashby, Mycologist of the Imperial Bureau of Mycology, visited the Island in October 1929, to investigate matters in relation to fungoid diseases of the sugar cane. Before leaving the Colony he gave a lecture on all the diseases from which sugar canes

were suffering in Mauritius pointing out the necessity to combat seriously the two principal ones viz : Gummosis and Leaf Scald by means of a rigorous selection and by what appeared to be more important, the substitution of new varieties more resistant to these diseases.

It is to be hoped that Professor Ashby's report will contain more ample advice and will be of the greatest value to the sugar planters.

From the economic point of view, the year under review was decidedly unfavourable. The average sale prices for sugar approximated to Rs. 7.50 per 50 kilos, a figure which is in many cases below the cost of production. As a result, many sugar concerns closed the year with a deficit. The Secretary of State for the Colonies delegated Sir Francis Watts, K.C.M.G., D.Sc., to investigate matters and report thereon, with a view to putting the whole industry on a sounder economic basis. During his stay the services of the Sugar Technologist were placed at his disposal to render his task easier and he remained in close touch with the Department in connection with information which he required.

In continuation of the arrangements made the year before with the object of producing new varieties of sugar canes, a special branch of Research has been created and attached to the Department of Agriculture. This Branch comprises a Geneticist, a Bio-Chemist and Soil Physicist, a Botanist and three Assistants, graduates of the College of Agriculture.

The Geneticist is to be the head of the Branch. The Branch is financed partly by the Empire Marketing Board, partly by the College of Agriculture and the Improvement and Development Fund. Its total annual cost is estimated at Rs. 50,000.

During the year some 12,000 seedlings have been raised at the Royal Botanical Gardens at Pamplemousses, the new Station created for cane breeding under the supervision of the Cane Breeding Officer, Mr. A. de Sornay, who was sent to Coimbatore to study cane breeding. About 6,000 seedlings have already been planted out and are under observation.

Five Experimental Stations have been established in various localities of the Island with a view to determining the type of cane varieties, both imported or locally produced, best suited for local conditions. Cuttings of new varieties are being distributed to Estates and nursery fields established in co-operation with estates.

The Java cane P.O.J. 2878 was imported from Java and is undergoing a greenhouse period of trial.

In the same connection, mention should be made of the mission of Mr. L. Baissac, Sugar Technologist of the Department, to Java to enquire about the industrial methods practised there and their possible application in Mauritius.

The report of Mr. Baissac has been submitted to Government and is being printed for distribution amongst the planters.

SUBSIDIARY INDUSTRIES

Fibre

Quotations for aloe fibre (Mauritius Hemp) were on the downward trend during the year. As a result, production slackened perceptibly. The total exportation for 1929 was 2,476 tons comprising stocks left over from last year's production.

The prices obtained after having been very high during these recent years have gone down considerably and to such an extent that towards the end of the year they were scarcely above the cost of production and that, at a time when rather large expenditure was being incurred to improve the quality.

The prices were not only low but there was practically no demand. It is not likely that this state of affairs will improve in the near future, and thus some 3000 people will be affected in the region where the greater quantity of fibre is produced ; the sugar industry, the only one which can absorb them being itself handicapped, it is to be feared that these people will be without work.

It is to be hoped that the project of making sugar bags by means of aloe fibre will meet with success and that an appreciable quantity of fibre will be absorbed. Part of the wherewithal for establishing the plant has been subscribed, the remainder is to be advanced by the Improvement and Development Fund.

Tobacco

During the year, considerable progress was made in the Industry and greater quantities of leaf grown locally were absorbed by the various factories. The quality of the leaf produced in some cases is in the opinion of experts, as good as any which is produced elsewhere. The total acreage under this crop in 1929, was 2,681 as against 1,594 in 1928. The crop was estimated at 450 tons, the greater part of which was purchased by local manufacturers. The estimated saving to the Colony approximated to Rs. 1,700,000. No export trade has, however, yet been established.

Mr. Corbett, Tobacco Officer, was sent on mission to South Africa to study closely the working of Tobacco warehouses with the view of establishing the Industry on a more satisfactory footing and overcoming its present difficulties. He left on the 12th June and returned in October. His recommendations may be summed up as follows : —

(*a*) Improvement of the leaf.
(*b*) Control of production.
(*c*) Stabilising the market by the establishment of a Central Warehouse.
(*d*) Compulsory sale of the leaf to the Warehouse.

A Committee was appointed to discuss his report and the Committee was still sitting at the end of the year.

FRUIT CANNING AND PRESERVING

The movement has recently received fresh impetus and is now offering fair prospects of success. By the end of 1929, over Rs. 100,000 had been subscribed by local capitalists towards the formation of a society with a limit capital of Rs. 150,000. So soon as this limit is reached, further assistance, to the same amount, will be given by the Development Fund in the shape of a loan. Pineapple plantations on a scale commensurate with the production contemplated have been started and, in the manufacturing processes, expert advice will be sought.

New varieties have been introduced and grown at Barkly Experiment Station and at the Royal Botanical Gardens, Pamplemousses, for propagation and distribution amongst planters and advice is being given as to the cultural methods to be employed.

RICE

As a result of the conditions now prevailing attention is again called to the possibility of raising subsidiary crops. Rice growing has more particularly attracted attention of late.

Trials on a large scale have been made by the Department to establish possible yields as against cost of production; other trials will soon be made so as to establish which varieties are best suited to the Island and to the taste of the Community—the results of such trials will be made known in due course.

COFFEE

Much attention is being given to this commodity since the introduction of disease resisting varieties. Several plantations of a comparatively large extent have been started.

OIL CROPS

The trade in copra in 1929 has been practically the same as in the previous year. The total export approximated to 1,400 tons valued at about Rs. 400,000 in round figures. The trade in coconut oil has decreased: the total export approximating to 15,000 litres as against 28,000 in the previous year.

ALCOHOL

There are seven distilleries at present at work in the Island, several of which with well-equipped installations, producing alcohol for human consumption and for industrial purposes. The rum production during the year was 896,000 litres as against 825,208 in 1928.

TEA

Efforts are being made to revive this industry and Government has been approached for financial assistance.

FOOD CROPS

There has been no change of importance during the year. At the beginning of 1929, the area under maize was estimated at 2,000 acres, that under manioc at 3,000 acres, potatoes and sweet potatoes covered about 700 acres, vegetable and fruit trees 5,000 acres.

LIVE STOCK

Animal diseases were little in evidence during the year. The measures against surra were enforced on the same lines as heretofore and only forty three cases were detected. Vaccination of bovines against tuberculosis is meeting with increased appreciation on the part of breeders. Importation of cattle from Madagascar and dependencies, for food, numbered 6,133 head, of a total value of Rs. 414,783 and, for other purposes, 937 head, of a total value of Rs. 59,871.

CO-OPERATIVE CREDIT SOCIETIES

On the 30th of June, 1929, there were 26 Societies and the total membership amounted to 2,415 while the total working capital on the same date was Rs. 295,561, or an increase of Rs. 3,041 on the previous year's transactions.

AGRICULTURAL EDUCATION

A change was brought to the curriculum of the Agricultural College whereby the duration of studies was reduced to 2 years. At the same time, the level of the Entrance Examination was raised so that, upon the whole, the standard attained by students who complete the course, remains practically unchanged.

Fourteen students followed the regular courses in 1929 while four post graduate students carried on special work at the College.

The examination in Sugar Manufacture of the City and Guilds of London Institute was held, as in previous years, under the College auspices. Two students obtained the final certificate.

All the men who obtained the College Diploma have so far found ready employment on Estates in Mauritius, while a few of them got situations abroad. The advantage accruing to the Sugar Industry by the introduction of specially trained men on Estates is already perceptible and will increase with time.

FARM SCHOOL

Work at the Farm School, attached to the Department of Agriculture, was carried on on the same lines as heretofore. Fifteen students were in attendance. Two second year Students obtained Agricultural Cadetships and four obtained Forestry Cadetships.

RODRIGUES

Conditions are very satisfactory from the point of view of general agriculture. Poultry farming is being encouraged and new varieties introduced both for propagation purposes and for improvement of local breeds.

Vanilla cultivation offers good prospects of success and is being systematically encouraged, the produce being likely to find ready market in Mauritius.

Coffee cultivation is also encouraged and new varieties have been introduced. Fruit trees and other forms of food crops are receiving special attention.

The Island was visited during the year by the Chief Agricultural Officer.

Insect pests have been reported on several occasions as interfering seriously with various crops to such an extent that it has been decided that the Scientific Assistant, Mr. Vinson, will pay a visit to enquire into the question and give advice to planters how to cope with these pests.

PART II

WORK OF THE DEPARTMENT OF AGRICULTURE FOR THE YEAR 1929

STAFF CHANGES

Mr. D. d'Emmerez de Charmoy, I.S.O., Assistant Director and Entomologist, was appointed Director in February and the post of Assistant Director was abolished.

Mr. W. H. Edwards acted as Entomologist until February 16th when he left the Colony. Mr. A. Moutia replaced Mr. Edwards as Entomologist until June 1929. In July, Mr. Moutia was appointed to the newly created post of Assistant Entomologist and Mr. Jean Vinson as Scientific Assistant, Entomological Division.

Mr. A. Delord, the Officer in charge of beetles destruction for Pamplemousses, was appointed Chief Phytalus Officer in February.

Mr. N. Craig, the Lecturer in Chemistry, returned from leave and resumed duty on May 5th.

Mr. L. Baissac proceeded on study leave to Java on the 26th of March and returned in the Colony on the 20th of October. During his leave he represented the Colony at the third Convention of the International Society of Sugar Cane Technologists.

Mr. E. Lesur and Mr. A. de Sornay returned from study leave on May 24th and October 3rd respectively.

From June to October, Mr. Corbett, Tobacco Officer, was on study leave in South Africa. During that period, Mr. E. Lesur, Irrigation Officer, acted as Tobacco Officer.

Mr. I. Félix, who was acting Vth Class Clerk, in the Immigration Department, returned to this Department as VIth Class Clerk on March 20th.

Mr. W. Bourdet, Vth Class Clerk, acted as IVth Class Clerk, Magistracies, from June 4th to January 3rd 1930. Mr. I. Félix, VIth Class Clerk, replaced him during that period.

Mr. Lamy, VIth Class Clerk, acted as Vth Class Clerk, Procureur General's Department from April 29th to June 6th. In October, he was transferred to the Judicial Department.

Mr. J. Valadon joined the Department as Acting Vth Class Clerk on February 11th.

Mr. G. H. Urruty, VIth Class Clerk, was appointed Librarian as from January 14th.

ENTOMOLOGICAL DIVISION

The Assistant Entomologist reports as follows :—

STAFF

Mr. W. H. Edwards acted as Entomologist until February 16th, when he left the Colony for Jamaica where he was promoted as Entomologist. Mr. A. Moutia who was acting as Lecturer in Entomology and Zoology replaced him as Entomologist until June 1929.

Since July, a post of Assistant Entomologist was created and filled by the appointment of Mr. A. Moutia. Mr. Jean Vinson was appointed as Scientific Assistant.

The general supervision of the Phytalus campaign was under the charge of Mr. A. Delord, the Officer in charge of beetles destruction, Pamplemousses, who was appointed as Chief Phytalus Officer in February.

Phytalus Smithi Campaign.—The number of beetles destroyed in 1928–29 has been 252,613,000 against 133,422,000 in 1927–28. Larvæ were destroyed on an extensive scale as last year ; 99,187,000 larvæ were bought from the Estates and public. The total cost of the campaign amounts to Rs. 111,051.72. Details respecting the infection in the various centres and other operations on the campaign have been published in another report and submitted to the Phytalus Advisory Board and sent subsequently to all planters concerned. About 4,000 tiphias were liberated in various infected centres. It is also worth recording that the Scoliid, Elis thoracica, introduced from Madagascar in 1917, is establishing itself fairly well, as a second parasite of Phytalus.

OTHER INSECT PESTS

(1) *Sugar Cane.*—(a) *Sesamia Vuteria*—In various places over the Island, young cane plantations suffered severely from the attack of the Pink Borer (*S. Vuteria*). The methods of control generally adopted to control this pest were given to planters, with full information respecting the breeding and propagation of the parasites.

(b) *Locust* : *Acridium coangustatum.*—An outbreak of Locust was observed at Cote d'Or over an area of 100 acres. Various insecticides were tried to cope with the pest which was partly checked. The insectivorous bird, Acridotheres tristis (Martin), was found in great numbers preying over these insects.

(c) *Aphis sacchari.*—This insect was very abundant in the Southern part of the Island. It was easily checked by numerous predators—coccinellids and syrphids, and one micro-chalcid, Aphidius sp. An entomogenous fungus was also noticed invading the insect at a certain period of the year.

(d) *Aleurodes bergi* was found in great numbers upon seedlings. It was easily controlled by spraying with petrol emulsion.

(e) *Chionaspis tegalensis.*—This scale insect infested severely some cane plantations, but was apparently checked by a small coccinellid, *Cephalocymus* sp.

(f) *Pulvinaria gasteralpha* was observed in small number on canes grown in greenhouses and did little damage, being parasitised by a micro-chalcid.

(2) *Coconut.*—(a) *Aspidiotus destructor.* This scale insect is still a major pest of the coconut plantations. There is strong evidence to show that this insect will in a near future be practically kept under control by the various parasites and predators. At present 2 microchalcids, one nitudilidae and 2 coccinellidae are maintaining the biological control. Parasitism by the micro-chalcids are as high as 40% in various places.

(3) *Tobacco.—Phthorimea operculella.* This insect caused a certain amount of injury to various plantations of the Island. Prompt measures of control were taken and this pest was easily checked.

(b) *Cut worms.—Prodenia litura.* Young seedlings were in some places attacked by cut worms. Baits and adequate spraying controlled easily this pest.

(c) *Mole-cricket* (*Gryllotalpa africana*). Caused appreciable damage in the seed-beds. Adequate measures of treatment were given to planters.

(d) *Eel-worm.*—(*Caconema Radicicola*). This pest is at present the most common and harmful to tobacco. Several chemical substances, mercuric bichloride, cyanogas etc. were tried against these nematodes ; the results were in no way encouraging.

4. ONION.—(*Thrips tabacci*). Small outbreaks of Onion thrips occurred at Flacq and Grand Port. Remedial measures were applied with success.

5. BANANA.—(*Cosmopolites sordidus*). This banana weevil was found damaging several plantations at Cluny and Savanne. Apart from the general measures that are ordinarily adopted to check this pest, experiments were tried with Cyanogas, but the use of this insecticide proved ineffective.

6. ALOE.—(*Pinnaspis minor*). During the month of July many aloe plants were severely attacked at Palmyre by this scale insect. Stringent measures were taken to eradicate this pest.

7. *Miscellaneous pests.* The following pests were also noticed during the year :

(*a*) *Solenopsis geminata*—Red Ants attacking seedlings.

(*b*) *Crambus emmerezellus*—Lawn cut-worm infesting lawns in different parts of the Island.

(*c*) *Icerya seychellarum*—on various plants.

(*d*) *Tetranychus* sp.—Red spiders on tomato, egg plant, etc.

(*e*) *Aphis tavaresi*—on citrus trees.

(*f*) *Elachista* sp. on sweet potatoes.

(*g*) *Agromyzea phaseoli* on beans.

(*h*) *Crocidolomia binotalis* on cruciferous plants.

(*i*) *Termites* in buildings and houses.

8. *Insects affecting stocks and farm animals.*—(a) *Stomoxys nigra.* This fly was abundant in all breeding places. In certain localities it was found to be the principal cause of traumatic ophthalmia affecting in some cases 30% of the animals.

(b) *Chrysomia putoria.*—This fly has been found to be the principal cause of Myiasis amongst cattle and other domestic animals. This disease is now very common.

(c) *Sarcophaga haemorroidalis.* This fly has been noticed to be the cause of some cases of myiasis.

(*d*) *Oestrus ovis.* Several cases of myiasis caused by this fly have been reported during the year.

9. *Breeding and distribution of useful Insects.* (*a*) During the year, the predators and parasites of Aspidiotus destructor, were distributed in newly infested centres and in places where they were scarce.

(*b*) The Prickly pear scale insect, *Cocus tomentosus*, was extensively propagated in various places. At present in more than 50 places over the island this insect is being bred and distributed systematically. In one place more than 300 acres are infested and the results are extremely promising.

(c) The predators of the Icerya Seychellarum, *Vedalia chermesina*, were distributed in several places highly infested by this scale insect.

(d) Scolia rufa, Elis thoracica and Tiphia parallela were distributed in various infected centres.

10. *Examination of Plants and Fruits—Manure.* Officers of this Division examined a large number of live plants, cuttings, tubers imported into the Colony. Thousands of cane cuttings were examined for export to Reunion, Madagascar and Kenya. During the year several consignments of goat manure from Rodrigues were examined. Several consignments of sand from Reunion for the Railway Department were sterilised.

11. *Diseases of Poultry and Farmyard Animals.* The most prevalent disease was Fowl Scepticemia. Coccidiosis and other intestinal protozoon parasites affected young birds. Several cases of paralysis of the hind legs amongst rabbits were noticed and the cause of this affection is under study.

Post mortem examinations of several birds and rabbits were made and advices given to the public.

The eye-worm, *Spinoptera emmerezii*, was common on young birds.

1. RESEARCH WORK.—*Phytalus Smithi and its parasites.*—(a) *Elis thoracica*—The biology of this wasp has been studied specially in relation to its role as a parasite of Phytalus Smithi. From the results obtained, this insect is parasiting the Phytalus larvæ in preference to other larvæ such as those of Adoretus, Cetonia, Oryctes under natural conditions.

(b) *Tiphia parallela.*—Research is being continued on the biology of this wasp, with special reference to its life cycle and number of generations under Mauritius conditions.

(c) *Diseased Phytalus larvae.*—The organism described by Mr. D. d'Emmerez as affecting Phytalus larvæ was also found in several places. This parasite is under study.

(d) The cause of a successively heavily infested soil in relation to a subsequent decrease in infestation is under investigation.

2. *Tobacco.*—Experiments were conducted on the tobacco eel-worm, Heterodera radicicola. It was concluded that this nematode can be found at different depths in the soil ranging from 6 inches to 18 inches. Experiments were conducted with Cyanogas, mercury bichloride as soil disinfectants. The results showed that these substances did not prove a useful means of control.

3. *Parasites of Aspidiotus destructor.*—The life history and occurrence of the different parasites and predators of Aspidiotus destructor is being continued.

4. Various insecticides were tried against banana weevil, *Cosmospolites sordidus*, Termites, Locusts, and lawn cut-worms.

5. *Myiasis and Traumatic Ophthalmia.*—The life history of the two main flies causing Myiasis in Mauritius has been studied. Incidence of the parasites of their pupæ was also investigated.

Education.—Full courses of lectures in Zoology and Entomology were delivered by the Assistant Entomologist to the first and second year students of the College of Agriculture.

These courses consisted in three lectures and two laboratory periods weekly.

The Scientific Assistant delivered during four months a series of lectures and practical demonstrations on Agricultural Entomology to pupils of the Farm School.

Examination.—The Assistant Entomologist acted as Examiner for the Monitor's Examination in Nature Study.

Publications.—A Bulletin on flies causing Myiasis in Mauritius has been prepared by Mr. A. Moutia and is under print. Some Officers of this Division contributed to the Revue Agricole.

Miscellaneous.—During the year many visits were paid by officers of this Division to planters and advices were given on the methods of treatment of insect pests affecting several crops.

CHEMICAL DIVISION

The Assistant Chemist reports as follows :—

I. STAFF

(a) Mr. N. Craig, the Lecturer in Chemistry returned from leave and resumed duty on May 5th.

On December 4th Mr. N. Craig was appointed as Bio-Chemist & Soil Physicist and transferred to the new Sugar Cane Research Station.

(b) Mr. R. Lincoln, the Assistant Chemist is acting as Chemist at the Department of Agriculture and Lecturer in Chemistry at the College of Agriculture.

(c) Mr. P. Halais was transferred to the new Research Station as Assistant to the Bio-Chemist.

II.—INVESTIGATIONAL WORK

(a) *Deficiency of soils in phosphates from analyses of cane juices.*—Experiments are still in progress to ascertain if it is possible to determine lack of phosphates in soils by the indirect method of cane juices analyses.

In that attempt which is a work of a preliminary nature various factors were tested ;

(i) *Effect of the acidity of the soil.*—When dealing with the same variety of cane it was found that rough correlation exists between the phosphoric acid content of the juice and the pH. of the soil, it is important to note that this stands true only when samples are taken in the same district.

(ii) *Effect of variety.*—The amount of phosphoric acid in cane juices from different varieties varies considerably.

When samples taken from a field which has received the same manurial treatment are analysed the following results were obtained :

Variety	Phosphoric acid in juice	No. of Estimations
White Tanna	.025 grs % ccs.	36
R.P. 8	.014 „	33
R.P. 73	.006 „	18

(These figures are the averages obtained)

It is a noteworthy fact that the White Tanna on the whole gives the highest percentage of phosphoric acid.

This work of a preliminary nature shows that each variety must be studied separately before it can be possible to state the phosphate deficiency of a soil by this method.

It is not possible to regard the figure 0.03 gms. Phosphoric acid per 100 ccs. of juice as indicating a necessity for phosphate manuring when dealing with local varieties of cane.

(b) *Synthetic Farmyard Manure.*—The "Adco" process of making artificial farmyard manure from cane trash was tried and results were compared with those obtained when urine and a suitable mixture of salts were respectively used. Factors such as water, air and temperature were observed.

After six months samples from each heap were analysed.

Just from the mineral contents of the manures no satisfactory conclusions can be drawn, so the "degree of humification" was determined, this figure furnishing the amount of "colloidal humus" which is considered by many authorities as the "active ingredient which confers on the manure most of its valuable properties." After six months the "degree of humification" was 47% in the case of the "Adco" manure, 38.1% when a "mixture of salts" was added and only 32.5% in the case of the urine ; after nine months these figures rose to 66.1%, 62.5% and 56.3% respectively.

(c) *pH Survey.*—A large number of determinations were made, the samples of soil were taken from different parts of the island. A certain correlation was found to exist between the height and acidity figure, this is probably due to the increased rainfall at higher level.

(d) *Liming Experiments.*—One of the most interesting works of the last past years has been the use of the soil reaction as a means of controlling both the vegetation and the micro organisms of the soil.

A field plot experiment was started in June in view of determining the action of liming. An acid soil was chosen (pH 5.7) at the Experimental Station of Reduit and the lime requirement determined according to the "titration curve" method. An adequate dressing of lime (12 tons per acre) was applied.

In these field experiments it was tried to reduce the errors of experiment to the lowest practical value.

On each trial plot five different varieties—the most common grown in the Colony i.e. White Tanna, Striped Tanna, R.P. 6, R.P. 8, DK 74,—were planted.

It will be possible to ascertain if these varieties are equally affected by an acid soil and to what extent.

(e) *Determination of phosphates by colorimetric methods.*—Different colorimetric methods were tried to determine phosphoric acid in soil water extract and citric acid extract.

(a) *Water extract.*—(*i*)The Denigès-Atkin's method gave on the whole very low results ; with standard solutions of phosphates the recovery varies from 15% to 60%, in view of these erratic results this method was given up.

(*ii*) Denigès' modification (copper reduction etc.) gave far better results, the percentage of recovery ranging from 90% to 100%.

(*iii*) Arrhenius' method was also tried, but although recoveries are quite satisfactory it cannot be applied on account of the minute quantities of Phosphoric acid generally present in soil water extract.

(b) *Citric extract.*—On the whole no definite conclusions can be drawn, work being still in progress.

(*i*) The modified Denigès' method was used without success, it was found that the presence of organic matter in citric extract is a serious impedimentum affecting the final result.

In soils where the organic matter has been destroyed before treatment with citric acid the recovery of added phosphates was always satisfactory, but if a phosphate salt is simply added to a citric acid extract, the recovery is low and erratic.

(*ii*) Arrhenius' method was tried, but did not seem to give reliable result on account of the abnormal intense blue coloration which develops sometimes.

(f) *Availability of Phosphates by Maize seedlings.*—Until recent years the need for phosphates was determined by the well-known Dyer's dilute acid method; the new methods are mainly vegetation tests rather than chemical.

The method generally consists in growing crops in the soil to be examined at the seedling stage.

It was found that when the experiment is carried out in proper conditions the results are reliable, Von Sigmond's method is the one used for phosphates.

Maize seedlings have been utilized for these investigations, but only one series of experiments is finished, others are in hand.

(g) *Cane Growth Measurements.*—In a series of experiments it was observed that a certain correlation might be established between the number of canes per stool, the average height of the canes and their thickness.

Further investigation into this question is under consideration.

III.—WORK DONE FOR OTHER GOVERNMENT DEPARTMENTS

(*a*) Samples of coal were sent as usual by the Railway Department, the calorific value as well as the percentage of ash and the sulphur content was generally determined.

(*b*) A sample of the mixture called "Cernite" used as a substitute for motor spirits was received from the Honourable the Receiver General and experiments have been made with the object of determining if potable alcohol cannot be recovered, etc., etc., it was found that the mixture affords reasonable safeguard to the revenue of the Colony.

IV.—ROUTINE ANALYSES

The routine work of the chemical division showed a considerable decrease during the year under review as compared with the preceding year, this is due to the smaller number of samples received for analysis.

	Samples received	Estimations
Guano melange	14	70
Lime...	8	8
Dipping solution ...	34	38
Phosphatic manures ...	7	7
Fumier	19	41
Coal	6	13
Miscellaneous	26	56
Cane Juices	603	1,206
	717	1,439

V.—PUBLICATIONS

A paper on the "Availability of Potash in a typical Mauritius soil" was published in the Journal of Agricultural Science Vol. XIX Part II.

VI.—EDUCATION

The usual duties in relation to the teaching of chemistry at the Mauritius Agricultural College were performed by the Lecturer in Agricultural Chemistry, the Assistant Chemist and the Scientific Assistant.

These duties consisted of the delivery of lectures and the supervising of laboratory periods weekly in each class. In addition, the Assistant Chemist delivered lectures on Forestry and Economics to one class.

VII.—EXAMINATIONS

The Lecturer in Chemistry was appointed Presiding Sub-Examiner for the University of London Intermediate Arts and Science Examinations.

The Assistant Chemist was appointed as one of the four examiners for the examination for the Registration of Agricultural Chemists.

VIII.—MISCELLANEOUS

The Assistant Chemist acted as Secretary of the Soil Survey Advisory Committee.

MYCOLOGICAL DIVISION

The Mycologist reports as follows:—

Investigations on Sugar Cane Diseases.

Leaf Scald, caused by *Bacterium albilineans* is still the most important disease of cane in the colony for the reason that White Tanna occupies over 50% of the cultivated area. The extent of the disease seems no greater or less than that in 1928, as a result of periodic inspections of estates by the Mycologist and the Plant Inspector. Amongst the varieties under cultivation on a field scale, White and Striped Tanna, St. Aubin and R. P. 8 are the varieties affected, in addition to some of the older varieties, such as Louzier and Iscambine, which, however, have been practically abandoned.

The attention of planters is being drawn to the moderate susceptibility of R. P. 8 to scald and the fact that the disease is not yet widespread on this variety, but may become so if precautions are not observed It is hoped, therefore, that steps will be taken by the selection of cuttings only from fields which are free from the disease, and the disinfection of the knife in lysol (5%) in preparing cuttings, to keep scald within such limits on the R. P. 8 as to render it a factor of little consequence in reduced tonnage.

Nurseries planted with White Tanna cuttings selected from apparently entirely healthy stools have been established at St. Aubin and Rich Fund Estates, on land kindly placed at the disposal of the Department by the respective managers of these estates, and at the Central Experiment Station, Réduit, with the object of attempting to propagate disease-free material of this variety. Up to the present, however, several diseased (chiefly scald-infected) stools have been removed from each of the nurseries of St. Aubin and Rich Fund, the disease having in all probability been in a latent condition in the cuttings from which these stools originated, as the appearence of the diseased stools suggested the occurrence of primary infection.

The widespread nature of the disease on White Tanna canes renders it unlikely that the establishment of nurseries with cuttings from apparently healthy stools will free these varieties from scald. This is due to the fact that apparently healthy stools within a quarter of a mile of an obviously infected stool are unsafe as sources of supply of planting material, as in such apparently healthy stools the disease is possibly present in a latent condition. Mr. D. S. North of the Colonial Sugar Refining Co., New South Wales, has discovered this peculiarity of scald as a result of extensive experimental work. The practice of planting canes selected from apparently heathy stools, and as far removed as possible from diseased stools, is, however, being recommended as one likely to keep scald within reasonable bounds, until such time as the susceptible varieties can be replaced by others more resistant or immune. Many promising seedlings, both locally raised and imported, show considerable resistance, almost amounting to immunity in many cases, to scald.

Further experiments were conducted to determine the effect of scald on sucrose content of cane. The results obtained showed a decrease of 10·1% in moderately diseased cane.

Gumming disease, or Gummosis, caused by *Bacterium vascularum*, attacks a greater number of varieties than scald, but in most cases only leaf infections are recorded. On very susceptible varieties, however, such as the Mauritius seedling, 55/1182 (the propagation of which was formerly being pushed on certain estates, but recently checked), many cases of stem infections, with resulting serious losses, are encountered. As pointed out in the 1928 report, the losses on White Tanna as a result of gumming are considerably less than those due to scald.

No increase of the disease on the island as a whole has been observed in 1929 as compared with 1928, and it is gratifying to note that many planters are making efforts to eradicate this disease and scald, or at least keep them in check, by the selection of healthy planting material and the propagation of resistant varieties, of which there are many amongst the new seedlings raised locally and some imported from abroad. Nearly every estate now has its own nursery of new seedlings with the object of selecting for propagation those both resistant to disease and suitable to the particular locality in each case.

The plots laid down in 1928 to test the effect of hot water treatment on scald and gumming are still under observation and will be reaped in August, 1930, when counts will be made of the infected stools in each line, and the type of infection noted. In two of the lines planted with *gumming* infected cuttings (untreated and heated at 50°C. for one hour) the presence of *scald* infected shoots has been observed. The appearance of the diseased shoots suggests that the infection proceeded from the cutting, or primary infection, in which case the two diseases must have been in existence together in the same cuttings.

Red Rot— (caused by *Colletotrichum falcatum*)—was of less extent in 1929 than in 1928. Varieties found affected were D.K. 74, M. 131 and R.P. 6 (chiefly D.K. 74), amongst those cultivated on a field scale.

Smut (caused by *Ustilago scitamineae*) was found chiefly on D.K. 74, M. 131, and R.P. 8, and though, as in most years, was almost entirely confined to the lower levels of the island where the mean temperature is highest, the disease was rather widespread on White Tanna on an estate in the elevated part of Flacq during the drought of March.

The position with regard to *streak*, *pineapple disease*, *root disease complex* and *pokkah boeng* remains practically unaltered. The condition known as *tangled-top*, or *twisted top*, was recognised and separated from *pokkah boeng*, with which it had previously been confused.

The plot laid down in 1928 to test the effect of streak upon the yield of cane was reaped towards the end of 1929. The yield of cane from streak diseased cuttings was 44% below that of cane from healthy cuttings. There is no evidence that the disease is transmitted from diseased to healthy stools. Planters are making efforts to eradicate this disease by "roguing" of diseased stools

Stem Deterioration.— Investigations on this affection are being continued. In the 1928 report the dry white pithy deterioration often found in the centre of cane stems was mentioned as being an early stage of what is known here as "stem deterioration." Further observations have shown that this is not so. The name "stem deterioration" is

applied to an affection marked at first by the presence of yellowish patches at or near the centre of the stem, which subsequently go reddish brown, and in advanced cases cause a hollowing of the stem. It may or may not be in association with the white pithy deterioration. In the former case the hollowing caused by one condition seems to accentuate that caused by the other. The Tannas are the varieties chiefly affected, but a few cases of what appears to be the same affection have been observed on R.P. 6.

A peculiar affection observed up to the present on the White Tanna and R. P. 8, and characterised by a rapid reddening of cut ends of stems, accompanied by the exudation of a white jelly-like or mucilaginous excretion, has been recorded. Investigations are in progress to determine whether or not the condition is infectious and transmissible to a succeeding crop or not in affected cuttings. No external evidence of the presence of this affection has up to the present been observed.

Numerous cases of "bunch-top," and a rotting of the terminal bud of canes just before arrow formation, were recorded during the year.

The practice of conducting surveys on experimental plots of seedlings, locally raised and imported, for the determination of the degree of their resistance or susceptibility to the more important diseases, was continued on an extended scale during the crop of 1929.

Diseases on Plants other than Sugar Cane

Tobacco.—Numerous cases of "mosaic" were encountered and reported, and notices issued to planters compelling them to "rogue" diseased plants.

The area of land near Terre Rouge affected with "frenching" in 1928 was found to be again bearing a crop badly affected with the same disease in January, 1929. Many plants were observed apparently recovering from the disease. In other cases the affection was noticed to have started after a period of apparently normal growth. Other cases were observed in which "topped" shoots affected with "frenching" were producing normal suckers.

Granville wilt (*Bacterium solanacearum*) continued to cause damage in isolated areas widespread over the island (see Report of Tobacco Officer).

Losses were experienced in seed beds through attacks of "damping off," with which *Rhizoctonia* sp. was found in association. Experiments are being conducted to test the pathogenicity, if any, of this fungus.

Attacks of nematodes were serious in Black River where the crop is being grown in sandy soil. Treatment of seed beds by cyanogas and formalin applications were recommended. Attempts are being made to control the trouble also by means of a suitable rotation of crops.

A "collar rot", which has symptoms almost identical with those of "black shank" reported from other countries, was recorded for the first time during 1929. The disease appears to attack chiefly some of the newly imported Virginian varieties. In some plantations serious losses are recorded. The disease is under investigation. *Phytophthora* sp. has been found in association with freshly diseased tissues.

Pine apple.—A dry rot, involving large portions of the fruit when still attached to the plant, was recorded during the year. The infection seems to commence at about the time of the dropping of the flowers. The disease is under investigation. A *Penicillium* has been found in association, but has not been found to be parasitic.

Lettuce.—A rot of the leaves in contact with the soil, which in some cases extended to the hearts of affected plants. *Rhizoctonia* sp. found in association.

Fig.—Ficus Carica—Rust, caused by *Cerotelium fici.*

Bordeaux mixture spray is being employed in its control at Barkly Experiment Station, Beau Bassin.

Maize.—The chlorosis of this plant most common in Mauritius is believed to be "corn stripe", although there is some evidence that "streak" exists also. A short article on the subject was published in "Tropical Agriculture". Attempts were made, without success, to transmit the disease from affected to healthy plants by means of a leaf hopper commonly found on maize. No increase in spread of the disease, or diseases, as the case may be, was observed during 1929.

Other diseases recorded are as follows:—

Physalis peruviana, Tomato, Cucurbits and *Brassica sinensis.*—Mosaic disease.

Cassia occidentalis.—Blight (*Phytophthora* sp.)

Bidens pilosa —Cercospora leaf spot.

Phyllanthus sp.—A mildew—fungus undetermined.

Manioc.—Die-back—*Gloeosporium manihoti.*

Citrus sp.—Die-back and root disease. A *Colletotrichum*, probably *C. gloeosporioides*, was found in association with the die-back.

Royal Palm (*Roystonea regia*).—Bud-rot—cause undetermined.

Bananas.—Wilt—cause undetermined—and "cigar end rot" on the Dwarf variety (*Musa Cavendishii*) with which *Verticillium* sp. was found in association.

Betel vine (Piper betel)—Leaf spot (*Bacterium betle; cercospora* sp. in association.)
Cyperus rotundus „ „ (*Cercospora* sp.)
Anagallis sp.— „ „ (*Macrosporium* sp. also bacteria in tissues.)
Plantago lanceolata „ „ (*Cercospora* sp.)
Commelyna benghalensis „ „ (*Septoria* sp.)
Argemone mexicana „ „ (*Macrosporium* sp.)
Digitaria sp. (Gazon) „ „ (*Helminthosporium* sp.)
Chenopodium ambrosioides „ „ (*Cercospora* sp.)

Mr. S. F. Ashby, B.Sc., Mycologist of the Imperial Bureau of Mycology, was in the colony on an official visit in connection with the cane disease situation from the middle of November to the middle of December.

Estates in the various localities of the island were inspected, and valuable advice given to planters by Mr. Ashby. The Mycologist accompanied him on all his visits of inspection. Before leaving Mauritius, Mr. Ashby delivered a lecture to planters on the cane diseases in Mauritius and their control.

During the year work was started on the preparation of a preliminary list of plant diseases in Mauritius.

Miscellaneous duties included :—

(1) Supervision of cane quarantine greenhouses containing plants of P. O. J. 2878 and P. O. J. 2725.

(2) Supervision of inspection of imported and exported plants.

(3) Lecturing and supervision of laboratory work in Botany and Mycology at the College of Agriculture.

VETERINARY DIVISION

The Government Veterinary Surgeon reports as follows :—

Importation of Animals.—The number of animals imported during the year, after examination was :—

	Foreign Countries			Dependencies		
	Number		Value	Number		Value
Cattle for food	5,817	...	Rs. 394,364	Cattle	316	... Rs. 20,419
„ breeding	937	...	59,871	Sheep	763	... 8,403
Horses	16	...	37,396	Goats	2,535	... 20,068
Sheep	2	...	525	Pigs	1,202	... 31,627
Pigs	308	...	22,198	Donkey	1	... 33
Poultry		...	96			

Quarantine Station.—Five dogs and bitches have undergone six months' quarantine since the day of their landing, and subsequently delivered to their owners. Four pups born during detention were delivered to owner.

CONTAGIOUS DISEASES

Surra.—During 1929, 43 cases of surra have been detected, amongst which 3 cases on equines which were immediately slaughtered according to regulations in force. The number of smears examined was 7,983. Out of the 40 cases on bovines, 3 animals died during treatment and two animals relapsed. These latter were treated with higher doses of arsenic and subsequently recovered. In all other cases blood examination proved negative. Twenty one doses of soamin and arsenious acid were delivered for the treatment of diseased animals.

Tuberculosis.—The number of bovines tested with tuberculine amounts to 288 :—

Milch cows 17 ... 1 positive reaction
Breeding herd 271 ... 22 „ reactions and 5 doubtful.

Sub-cutaneous method was applied. Most of the reacted animals have been slaughtered by their respective owners.

B. C. G. Vaccine.—688 doses of B. C. G. vaccine were delivered. I am pleased to record the healthy conditions in which the injected young ones are. Most of the breeders are now employing the vaccine and have seen the benefit of its use.

Cruelty on Animals.—About 40 animals were examined at the request of the Police for cruelty. In most of these cases the owners were prosecuted and fined. The post mortem examination of four bovines, which died through ill-treatment was made, and the conclusions reported to the Police authority.

Government Animals.—The animals of the different Departments were attended to weekly and treated for the following :—

Police Department.—2 horses treated for lameness.
3 „ for punctured hoofs by nails.
1 horse treated for laryngitis.

Medical and Health Department.—2 mules and 1 donkey for lameness and 2 bullocks for abcesses.

Exportation.—One bull calf and 1 heifer calf of the Friesland breed, bought from the Government Dairy by the Department of Agriculture of Seychelles were placed under observation and controlled for surra, previous to their shipment.

Slaughtering of Animals.—About 60 cows and heifers have been allowed to be slaughtered during the year, most of these being farrow, wounded, affected with rachitism, having aborted and being unfit for breeding.

STATISTICAL DIVISION

The Statistician reports as follows :—

Agricultural Statistics.—The Blue Book Statistics, relative to Agriculture were supplied to Government. Statistical data were also supplied to the International Institute of Agriculture, Rome, to the Board of Trade, the Colonial Secretary's Office, the Immigration Department, etc., and to various interested bodies both here and abroad.

Quarterly reviews of local prices of certain essential articles together with Index Numbers were issued. Quarterly reviews of weather and crop conditions were supplied to Government, while the usual crop forecasts were prepared for Government and various interested bodies.

The results of field experiments conducted by the Department in relation to variety and manure trials were subjected to the usual statistical analysis.

Meteorological.—The meteorological service of the Department was conducted on the same lines as heretofore. Observations of relative humidity, of rainfall and continuous record of air temperature were obtained at the Central Experiment Station, Réduit, while temperature of air and of evaporation and rainfall were obtained at four secondary stations, viz : Royal Botanical Gardens, Pamplemousses ; Abercrombie Nursery, Port Louis ; Nursery Gardens Curepipe ; Barkly Experiment Station, Beau Bassin. In addition, most sugar estates contribute rainfall observations. These data are reduced, tabulated and coordinated, with a view of assisting in the work of crop forecasting and for general agricultural questions connected with climatic factors. Summaries of observational results are published in Appendix I of the present Report.

Educational.—The general management of the Agricultural College was carried on as usual, under the direction of the Principal and with the help of the College Clerk. Lectures were delivered and practical work supervised in Physics and Applied Mathematics, twice a week, for first year Students and once a week, for third year Students.

Special Work.—Under the auspices of the International Institute of Agriculture, Rome, and with the consent of the Secretary of State for the Colonies, arrangements were made for taking an agricultural census in Mauritius in 1930. All arrangements and preliminary work were completed in 1929.

SUGAR TECHNOLOGICAL DIVISION

The Sugar Technologist reports as follows :—

Visits to factories, investigations, etc.—The Sugar Technologist visited a great number of Sugar Factories during the last part of the crop, 21 of them in the company of Sir Francis Watts, K.C.M.G., during his investigations on the Sugar Industry of the Colony.

The production of raw sugar increased from 50% in 1928 to over 80%, most of it was sold to the British refiners.

The sucrose content of the cane was slightly lower than the average for the two previous years, but the mill extraction and the recovery were comparatively higher, due to the improved efficiency of the work and to the larger proportion of raws. The good quality of the juice and the experience gained the previous year made the manufacture easy. Five factories produced raws of a satisfactory standard without any sulphurous acid or in other words, using lime only for the treatment of the raw juice. This practice will probably generalize, for it has several advantages, the most important being a lowering of the actual cost of production and of the upkeep of the factory.

Sugar dryers continued to render good service. More water-cooled crystallisers were installed and there was a tendency to increase the capacity of the centrifugal department.

The work started during the previous year, by the Assistant Sugar Technologist, on the combustion of bagasse was completed and an article on the subject published by him in the "Revue Agricole".

Controle Mutuel.—Thirty one factories contributed to the Controle Mutuel and returns were regularly distributed fortnightly amongst contributors.

At the request of Sir Francis Watts, K.C.M.G., final returns for the years 1925 to 1929 were obtained from the 42 factories having a chemical control, out of the 43 of the Colony. The information wanted by Sir Francis Watts, K.C.M.G., was furnished and the figures compiled for publication in the "Revue Agricole." It is the first time that such complete information was published. The fact that 36 factories gave permission to give their names, increased considerably the interest of the final Controle Mutuel

A new feature in the chemical control of two of the factories is the installation of weighing machines for the juice and the exhausted molasses and of accurate measuring devices for the maceration water. This has increased the accuracy of the data obtained.

A patent was taken by Mr. Robert Menagé, factory manager of Savannah Estate, for an automatic measuring tank for liquids of all sorts, from water to syrup inclusively. This device is very simple and ingenious and is likely to give reliable information. It is anticipated that new installations of weighing and measuring machines will be made in the near future.

Educational.—The Sugar Technologist and the Assistant Sugar Technologist delivered full courses of lectures to the 1st, 2nd, and 3rd year students of the College of Agriculture in Sugar Technology, Sugar House Chemistry, Cultivation of the Sugar Cane, Mechanical Engineering, Building Construction and Surveying. The lectures in Sugar House Chemistry and Mechanical Engineering were followed by practical work.

The Students visited Sugar factories, Engineering workshops, and various other factories with the Sugar Technologist and the Assistant Sugar Technologist.

Miscellaneous.—The Sugar Technologist was selected as representative of the Colony at the Third Convention of the International Society of Sugar Cane Technologists held in Java and was requested to make himself acquainted with the Sugar research work carried out at the experimental station of the Java Sugar Syndicate, located at Pasoeroean, East Java. He proceeded on Study leave on the 26th of March and returned in the Colony on the 20th of October.

Articles were written by the Sugar Technologist and the Assistant Sugar Technologist, for publication in the Revue Agricole.

GOVERNMENT DAIRY

The Officer in charge Dairy reports as follows :—

Yield of Milk.—100,043 litres of milk were produced during the year showing an increase of 37,400 litres on the previous year. Milk was disposed of as follows :—

Supplied to Hospitals ...	63,034	litres
Supplied to the public ...	28,571	„
Fed to calves	7,987	„
Samples for control ...	451	„

The yields of individual cows are shown in Appendix II.

Births.—34 births were recorded comprising 19 females and 15 males.

Deaths.—Only one death was recorded throughout the year : a heifer calf, two months old, had its neck accidentally broken and it died.

Sales.—27 calves were sold to breeders in all parts of the Colony. Calves are sold at 10 days of age at the nominal rate of Rs. 10 per male and Rs. 25 per female, with a view to spreading the Friesland blood and thereby improving the Dairy breed of the Island.

Three cows were sold to the butcher on account of old age.

Surra.—Early in the year, the blood of the six cows which had suffered from Surra was tested on dogs. Results were negative in each case. The cows were henceforth considered free from the disease. They are however stabled in the smallest of the three cow byres so as to minimise the risk of contamination if there ever occurs a revival of the disease in their blood ; moreover their blood continues to be examined now and then under the microscope.

Abortion.—Nine cases of abortion were again recorded during the year. Four cows retained placenta after parturition and 34 cows were served unsuccessfully by the bull. Abortion, retention of placenta and unsuccessful services combine into an actual scourge for the Dairy and have received unabating attention since 1925. In the later days of December this year, all information relative thereto was summarised in a report and communicated to the Imperial Research Bureaux and also to the Director of Veterinary Services and Research of South Africa for favour of advice.

Enlargements.—The additional stables were completed early in the year and, in March, the 32 cows lately imported from South Africa were removed from Fort William Quarantine Station to the Dairy.

TOBACCO DIVISION

The Tobacco Officer reports as follows :—

Staff Changes.—In June the Tobacco Officer was selected by His Excellency the Governor to proceed to South Africa to study thoroughly the marketing of tobacco in that country and the working of Tobacco Warehouses.

During the period June-October whilst the Tobacco Officer was absent in South Africa the Irrigation Officer acted as Tobacco Officer.

Experiments.—Experiments with various varieties were carried out at Barkly, Pamplemousses and at Mouna. The area at Mouna was also extended.

Larkly.—At this Experimental Station the following varieties were tried out: Amarello, Gold Leaf, Blue Pryor, Hickory Pryor, Yellow Pryor and Blue, and the yields obtained are set out in Appendix IV (a), and from which it will be seen that the variety Blue Pryor has consistently given a low yield. At the same time it must not be lost sight of that the fields were generally badly attacked with Nematodes which stunted the plants considerably. The varieties Amarello, Hickory Pryor, Yellow Pryor are the most promising of all as they all cure well and give a better quality leaf than the other varieties.

Plants raised from crosses between Yellow Pryor to Blue gave rather promising results and these are being tried out further during the ensuing year.

Seeds of two varieties of Turkish Tobacco were obtained from South Africa i.e. Karsi Yaka and Soulook, and gave extremely promising results, notwithstanding the fact that the curing was carried out under most adverse circumstances, rain falling persistently during the period when the leaf was ripe.

Owing to the small area available at the Station and constant cropping with tobacco, the experiments during the ensuing year will be considerably curtailed.

Pamplemousses.—Only a small area is available at the Station and the following varieties were tried out: Hickory Pryor, Blue Pryor, Joiner and Yellow Pryor. The yields from the first crop were very good but the second crop was badly attacked by disease and the yields considerably reduced. The leaf was all air-cured and some quite good leaf was obtained from the first crop, but unsuitable climatic conditions reduced the quality considerably during the latter weeks of the year. The yields are set out in Appendix IV (a).

Mouna.—Experiments with various varieties were conducted at this Station, but in the latter half of the year disease reduced yields considerably. There was a very bad outbreak of Granville Wilt (Bacterium solanacearum) and also of Nematodes (Heterodera radicicola) and several of the varieties failed. In consequence thereof the land has been placed under green manure and will be followed by rotation crops of maize. Results of experiments are set out in Appendix IV (a).

Progress of Industry.—During the year 1929 considerable progress was made in the industry and greater quantities of leaf grown locally were absorbed by the various factories.

The following table contrasts the acreage registered with that of the previous year :—

	1928	1929
Flacq	693	1,312
Rivière du Rempart	294	661
Black River	272	269
Pamplemousses	157	243
Port Louis	31	46
Plaines Wilhems	82	74
Moka	54	59
Grand Port	5	4
Savanne...	9	13
Total ...	1,597	2,681

The crop is estimated to have been Kilos 450,000 of which Kilos 408,394 were purchased by local manufacturers as against 298,077 the previous year. The yield per acre registered therefore is Kilos 152:37 which is slightly less than the previous year when the average yield was estimated to be Kilos 194:144. The weather conditions were undoubtedly the cause of low yields as the weather was very dry at the commencement of the second crop.

The graph [Appendix IV (d)] shows the decrease in Importations of all classes of tobacco, which were so low as to cause a revision of both Custom and Excise duties in October, the Excise duty being increased from R. 1 to Rs. 2 per kilo. From the graph it will be noticed that the total imports have dropped from Kilos 229,023 in 1920 to Kilos 65,570 in 1929 and this clearly indicates the progress made by the local industry.

The table set out in Appendix IV (c) shows the decline or increase in all classes of tobacco imported during these years and from which it will be noticed that the greatest decline has been in the imports of manufactured tobacco which was imported in large quantities from the neighbouring Island of Réunion. It was the importation of this type of tobacco which first drew the attention of Sir Hesketh Bell, to the cultivation of tobacco here, and since the year 1923 there has been a steady decline in the importation from Réunion and a steady rise has been recorded in the local industry since that date. In the past five years the local industry has been responsible for reducing the total imports from Kilos 261,121 in 1925 to Kilos 65,570 in 1929, a reduction of Kilos 195,551, notwithstanding the fact that there has been an increase of Kilos 18,000 in unmanufactured leaf imported and even in this class of tobacco a decline of Kilos 35,772 is recorded since 1926.

The amount of local leaf used in manufactures during 1928 was Kilos 199,227 whereas in 1929 it has risen to Kilos 270,792, or an increase of Kilos 71,565, and the total amount of tobacco manufactured in the Colony inclusive of imported leaf, during 1928 was Kilos 207,695 and in 1929 Kilos 251,050 an increase of Kilos 43,355. These figures clearly indicate the phenomenal progress made by the industry and which has resulted in a saving to the Colony of Rs. 1,732,000.

The great decrease in imports demanded a revision of the Customs and Excise duties and these took effect as from October. The table shown in Appendix IV (b) sets out the various duties imposed as from 1926 onwards.

In November, His Excellency the Governor appointed a Committee to report on the recommendations contained in the Tobacco Officer's report submitted on the conclusion of his mission in South Africa. The Tobacco Officer was appointed Secretary to the Committee; the Committee was still sitting at the end of the year.

During the year under review no publications were issued concerning tobacco.

Various statistical information were supplied to Tropical Agriculture and also articles on the the Tobacco Industry of Mauritius.

The field inspection and advisory work was carried on throughout the year and the Officers of the Division paid 4457 visits to growers.

39 notices were served for the destruction of Mosaic diseased plants. One grower was prosecuted under Proclamation No. 51 of 1927 for non destruction of Mosaic plants, 23 growers prosecuted for the cultivation of ratoons, and 12 growers were prosecuted for failing to register plantations, making a total of 36 prosecutions.

Mosaic was fairly well controlled by the regulations enforcing roguing of diseased plants and preventing the cultivation of ratoons.

Nematodes caused considerable damage in all districts of the Island.

Granville Wilt (Bacterium solanacearum) caused considerable damage in several plantations in the Black River district and Flacq, whilst isolated cases were reported from all districts and it appears to be fairly widespread over the Island.

Black Shank (Phytophthora parasitica) was reported towards the end of the year and identified by Mr. Ashby who was visiting the Island at that time. The disease was chiefly confined to certain Estates in the Black River and Pamplemousses districts and appeared to affect chiefly the introduced Virginian varieties.

Leaf spotting was fairly common throughout the Island, cases of Cercospora nicotiana and Angular leaf spot (Bacterium angulatum) being detected as well as several unidentified and believed to be non parasitic.

Fusarium sp. has been detected on leaf spots but pathogenicity was not established.

Mildew (Oidium sp.) was encountered on a few plantations during the winter months and was chiefly due to bad cultural methods.

A few cases of Frenching were reported but not in any great numbers.

The division sold 5515 grams of seeds to growers and 48,200 seedlings for which a sum of Rs. 444.40 was received.

The sale of leaf from Experimental Stations realised Rs. 2,274.29.

Government Grading Warehouse.—The only tobacco received during the year was the product of the Experimental Stations and this was sold locally; the total amount being Kilos 2,285.

No leaf was exported by the Warehouse during the year, but permission was given to the British American Tobacco Cy. (Mauritius) Ltd. to export one bale of leaf of 114 Kilos net weight to London.

Two bales of leaf which were exported in 1928 by S.S. Vulcain were sold towards the end of the year, which makes a total of 11 bales sold out of the total of 187 bales shipped and 3 bales damaged throughout.

There still remain 173 bales unsold in London.

The Supervisor of the Warehouse spent the greater part of his time assisting with inspectional and instructional work.

AGRICULTURAL AND EXPERIMENT STATION DIVISION

The Chief Agricultural Officer and the Assistant Agricultural Officer report as follows:—

EXPERIMENT STATIONS

Experiments with canes.—Plantations of many promising varieties were made during the year in the new cane nurseries at Bonne Mère, Circonstance, Mon Rocher and St. Aubin Estates. The canes are grown and receive the same treatment as under Estate conditions, they are growing well; it is intended next year to select the best for distribution to Estates and planters.

Many planters are at present trying the new varieties recommended to them by the Department. New varietal plots were started at Bénarès, Savannah, Le Vallon, La Caroline, Bon Air, Belle Vue, Mon Désert (Moka), Trianon, Ébène, Highlands, Union (Flacq), Alma, Queen Victoria, etc.

Three new plots were planted at the Central Experiment Station, Réduit, with a collection of the best cane seedlings of the different series raised in the Island.

In the varietal field at Mon Rocher, 143 varieties raised in 1928 were propagated in September in the six hole trial. 100 varieties of the 1927 series were planted in August in thirty hole trial. 79 varieties of the best canes selected from different other series were also propagated, 150 holes of each of these varieties were planted.

In all these trials, standard canes, such as White Tanna, D.K. 74, Striped Tanna and 55 P. were also planted at regular intervals for comparison as to growth, resistance to disease and insect pests, yields etc.

At Mon Plaisir, a plantation of sixty three best varieties was also made.

A successful Planters Field Day was held on the 25th of July at Mon Plaisir.

The meeting was attended by about one hundred Managers, Chemists, Employés of Estates and other interested persons. The Director of Agriculture and his Assistants showed the visitors round the fields, and explained to them the different works in progress; considerable interest was taken by the visitors in the cane breeding and propagation experiments. As a result of this demonstration, many applications were received from all parts of the Island for cane tops of the best varieties; these were supplied free to all applicants.

Cane seedlings were raised as in former years at Mon Plaisir; this work is now under the supervision of a special officer, the Cane Breeder, who has recently been appointed for cane breeding.

Managers of Estates and other planters often visit the Experimental Stations during the year to see the different trials which are being carried out; every effort is made to interest them. Free distribution of seeds of leguminous plants used as green manure, cuttings of new varieties of sweet potatoes, eddoes, yams, manioc, etc. is made to all persons applying for them.

The Java raised seedling P. O. J. 2878 introduced last year is making progress in the quarantine greenhouse, so far no signs of any disease have been found on this variety by the Botanist.

As in previous years, experiments with canes were carried out on several Estates.

137 tons of canes were reaped at Mon Plaisir and sold to Beau Plan Estate. At the Central Experiment Station, Réduit, 206 tons were bought by Trianon Estate.

Stock Farm, Réduit.—A great reduction was made in the number of animals kept at the Stock Farm by the transfer of some to the Curepipe Dairy and the sale of others. Only the following animals were retained:—

2 Hissars. 2 Ongole. 1 Friesland. 4 Charolais.

Twenty three services were recorded at the Stock Farm. One Ongole, one Hissar and one Charolais bull were sent for service to the following Estates:—Bénarès, Mon Loisir (Rouillard), Les Salines, La Chaumière and Union Vale.

Quarantine Station for dogs.—Ten dogs were kept under observation during six months at the Quarantine Station.

Central Experiment Station.—Experiments were started to find out the influence of lime on different varieties of canes. A field free from stones and of uniform fertility was selected, it was divided into 24 plots each containing 150 holes. On 8 plots, 375 kilos of lime per plot were spread on the surface between the rows. On 8 plots the same quantity was dug in. No lime was applied on the remaining plots. The results of these experiments will be published later.

Manurial and varietal experiments were also carried out.

Plantations of Yams, Eddoes, Tannias, Sweet Potatoes, Pistache and leguminous plants used as green manure were made. Seeds and cuttings of the above plants were distributed free to all applicants.

About half an acre of land was planted with "Ocimum canum" a plant of the family Labiateæ received from Zanzibar.

A camphor substitute is obtained from the leaves and stems by distillation. The plants are making vigorous growth, it is intended to start distillation early next year.

Stock Garden.—Several varieties of pine apples were grown in the Stock Garden for distribution to planters and school gardens; grafted rose, annuals and vegetable plants were also sent to school gardens.

Farm School.—Eight pupils were admitted at the beginning of the year, one of them resigned on account of ill-health.

Seventeen students are now being trained, seven of them for the first year, eight for the second year and two Agricultural Cadets.

The conduct and work of the pupils were satisfactory.

At the end of the year, four 2nd year pupils were transferred to the Forests Department as Cadets, and two were promoted as Cadets in the Agricultural Department.

Government House Grounds.—The grounds were maintained in good condition. Flower beds were planted with annuals and other ornamental plants.

A supply of vegetables and fruits was sent daily to Government House.

Barkly Experiment Station.—The revenue for sale of plants, seeds etc. amounted to Rs. 3,073.28, an increase of Rs. 1,579.50 compared to last year. The public take a great interest in this Nursery which is situated in a central district and is of easy access. Many persons visited this Nursery during the year.

The plant shed having been found too small to contain the number of plants raised, was again increased for the third time. An additional space of 2,500 square feet was obtained, this consists besides the paths of ten large concrete platforms each nineteen feet by four feet and two smaller ones each 19′ × 2′, to place the plants ready for sale.

New interesting additions were made in the orchard, the following were planted: —

11	Mangoes (grafted)
8	Nectarines ,,
21	Peaches ,,
10	Mandarines ,,
10	Oranges ,,
25	Citrus (various) (grafted)
16	Avocado pears ,,
24	Fig layers
39	Pecan nut plants
10	Plums (grafted)
8	Letchis layers
30	Grape vine
13	Loquats (large fruited)
10	Jujube ,,
6	Almonds (grafted)
16	Mulberries (large variety)
6	Prunus capulii
2	Carissa carandas
3	Anonas (grafted)
25	Coffee plants (5 species)
6	Fruit trees (various)
9	Spices ,,
9	Ornamental trees (various)
35	Kapok
Total ...	352

Three hundred letchis, 100 fig and 25 apple layers were made. Thousands of seedlings of different species of coffee, fruit trees, cloves, palms and ornamental plants were also raised.

Root suckers of Bread fruit were received from Ferney Estate. Mr. Louis Lenferna gave six new varieties of Figs in exchange for other plants. Seeds and plants of Peaches, Avocado pears, Jaboticaba, Nectarines, Plums and Palms were received from Mr. Gabriel Régnard.

Collections of leguminous seeds and fodder plants were distributed to Estates and planters.

The following plants were sent to the Experimental Station at Rodrigues :—

16 Bread fruit	24 Eriodendron anfractuosum
10 Letchis	24 Anona reticulata
20 Jonesia declinata	12 Persea gratissima
6 Mango (Grafts)	12 Eryobotrya japonica
22 Chrysobalanus Icaco	12 Caryophyllus aromaticus
4 Aleurites triloba	12 Anona squamosa
4 Spondias dulcis	12 Carica papaya
9 Passiflora laurifolia	50 Camphora officinarum
2 Agatophyllum aromaticum	One case coffee seeds different species
15 Araucaria Cunninghamii	12 Artocarpus sp. (Rima)

3,400 plants were sent to School Gardens, Abercrombie Nursery, Rose Hill Board of Commissioners, Bacteriological Laboratory, Civil Hospital and other Government Institutions.

Royal Botanical Gardens, Pamplemousses.—One of the Talipot palms (Corypha umbraculifera) flowered during the year, this rare and interesting event attracted hundreds of visitors daily to the gardens during the flowering period. On Sundays, numerous persons from all parts of the Island came to admire the palm. Many picnics were held. This year holds the record for the number of visitors.

The gardens were kept in good condition throughout the year. All the rustic bridges, hand railings, and kiosques were repaired. The lawns were regularly mown, hedges and grass borders were also often trimmed.

An experimental plantation of "Taraktogenos Kurzii" was started at Mon Plaisir on the 5th of July, the plants are growing well.

36 plants of a new species of gum tree "Eucalyptus Naudiniana" received from New Guinea were also planted, they are making vigorous growth.

10 clumps of the Giant Ceylon bambou were planted along the Eastern boundary.

The Overseer's quarters were repaired and repainted.

Two bridges and one kiosque were swept away in the Ravine during the flood on the 29th December.

336 Mango grafts and 230 Letchis layers were prepared and forwarded to Barkly Experiment Station and Abercrombie Nursery.

Ourepipe Gardens.—A new plant shed 85 feet long, 10 feet wide and 7 feet high was erected. Half of the roof is covered with glass and the other half with wire netting.

The collection of plants in the Rosery was increased by the addition of many new varieties. A large number of roses were budded, some were planted in the gardens and others sold to the public.

All hedges, lawns, flower beds, paths and roads were kept in good condition.

Seedlings of Cyrtanthus, Gloxinias, Gladiolii, Dahlias, Amaryllis were raised.

The plantation of solid camphor yielding trees made in 1928 is growing well; it is intended to prune them early next year and to utilize the leaves and branches for distillation purposes.

Food Settlements.—The food settlement at St. Martin which is leased to shareholders of the local Co-operative Credit Society was regularly visited by the Assistant Agricultural Instructors to advise the planters as to the best methods of cultivating their crops.

Manioc and maize were the chief plants raised.

Co-operative Credit Societies.—The work of these Societies is reviewed in a separate report.

Abercrombie Nursery.—As in former years a large number of fruit trees, ornamental and economic plants were raised.

The following plants were sold during the year:—

85 Letchis layers.
104 Mango grafts and seedlings.
806 Citrus plants.
304 Palms.
2,031 Miscellaneous plants.

Plants were also distributed free to other stations of the Department and to Government Institutions.

The coconut plantation in the vicinity of the nursery is making satisfactory progress.

FARM SCHOOL AND AGRICULTURAL CADETSHIPS

The Lecturer Farm School reports as follows:—

Farm School.—During the period under review, the Farm School entered on its second year's existence.

At the beginning of the year there were eight pupils sitting for the 1st year's work, but by the middle of April one left through illness and thereafter the class continued with 7 students.

The 2nd year section was run with its full number of boys which is 8 for the time being; these were pupils who had successfully completed their 1st year's training in 1928.

In both 1st and 2nd year sections the pupils had an average of 24 hours practical gardening, 2 hours carpentry, 2 hours smith and 10 hours class work per week.

The syllabus for class work covered the following:—(*a*) English (*b*) French (*c*) Geography (*d*) Arithmetic (*e*) Mensuration (*f*) Agriculture (*g*) Botany (*h*) Chemistry (quite elementary) and Entomology. Watts' "Nature teaching" was the chief text book adopted for lectures in Agriculture and Botany; the hints found at the end of the chapters under "Practical works" proved of high value in connection with experimental demonstrations.

Test papers were set periodically and an examination on the whole year's work was held in December.

In general, the pupils showed good disposition for work; whilst in gardening, carpentry and smith works they proved practically of equal standard, in class performance they exhibited distinct inequality.

This condition betrays a lack of grounding in Nature Study and in general education which they were supposed to possess at the outset; the shortcoming therein gave place, finally, to a great disparity in their power of digesting information conveyed by the lecturers.

The results of Examination exclusive of Entomology appear in percentage of marks scored as follows:—

2nd year section: 1st—87.8; 2nd—82; 3rd—80.9; 4th—74.2; 5th—73; 6th—54.7; 7th—54.2: 8th—51.2; here the gradation from the 1st to the 5th is on the side of the normal rather, then a large gap comes in followed by slight differences to the 8th.

1st year section: 1st—89; 2nd—59.4; 3rd—57.7; 4th—57.4; 5th—52.7; 6th—50; 7th—36. In this section the difference is noticeable between the first and the second, then follows a normal gradation but in the low degree.

Early in April, the course in Entomology was started and lectures of one hour per week were delivered by the Scientific Assistant of the Entomological Division of the Department. The 1st and 2nd year sections attended the same course; an examination in the subject was held in December the results of which were read separately from those of the other subjects of the curriculum.

The first scored 75% of the total number of marks and was the same boy of the 1st year section who was also the head boy of his class with 89% in the other subjects.

The second came out with only 67% and the third with 61%; then came five boys with percentage varying between 59 and 50; three between 44 and 41. One with 35 and two with 29 and 22% respectively.

The results transcribed above, moderate as they appear were, nevertheless, achieved at great expense of efforts on the part of the teachers; the amendment brought to the regulations governing the selection of candidates for the Farm School is in the main responsible for the situation.

Arising out of difficulties encountered in connection with the recruitment of pupils, the standard of attainments relating to the eligibility of candidates was lowered from a pass in the Bursary class, as provided originally, to a pass in the VIth standard. Secondly, the obligation previously imposed, to the effect that candidates chosen should have attended schools possessing school gardens and gained, thereby some grounding in Nature Study, was done away with altogether.

As a result, some boys of manifestly low attainments gained access to the Farm School and the task of imparting the requisite knowledge to them became an arduous one.

The programme of studies, as traced out is in itself quite in concordance with the aim proposed, so that the return to the original plan of selection is the only remedy to be advocated with the view of securing better achievements in the future.

On the other hand, the creation of the Farm School and Cadetships was timely and opportune; the institution is already proving to be a powerful agency towards the diffusing of agricultural taste among the population and at the same time is serving to counteract efficiently the great prejudice which was always shown by certain sections of the community in regard to works connected with the soil.

Agricultural Cadetships.—One 2nd year and two 1st year Cadets were trained under the Department during the year.

Students for Cadetships were picked out as follows:

At the inception of the Farm School and Cadetships in 1928, those students who were under the former regime of Agricultural Forestry apprenticeships and who were due for their 2nd year's training were absorbed in the rank of 2nd year pupils of the newly created institution, whereas the 3rd year apprentices became 1st year Cadets. Only one of such apprentices was eligible for a cadetship under the Agricultural Department that year and in the year under review this Cadet became a 2nd year Cadet whilst among the successful 2nd year pupils the two 1st year Cadets were chosen.

By January, the post of Junior Overseer at Pamplemousses becoming vacant, the 2nd year Cadet was appointed therein, in spite of the fact that he had not yet terminated his term of training.

Of the two 1st year Cadets one was attached to the Tobacco division of the Department and the other served as Assistant to the Overseer of the Farm School.

Rodrigues

The Acting Agricultural Superintendent reports as follows:—

CLIMATIC CONDITIONS

RAINFALL

	Oyster Bay		Solitude		La Ferme	
	Rainy days	Inches	Rainy days	Inches	Rainy days	Inches
January ...	13	5.55	11	7.44	3	4.78
February ...	14	7.93	10	8.90	8	7.32
March ...	18	2.47	8	2.06	4	4.55
April ...	24	12.78	22	13.36	12	9.89
May ...	18	5.40	17	7.58	11	7.68
June ...	18	3.94	16	3.41	9	2.39
July ...	15	1.45	10	1.77	2	0.28
August ...	13	1.62	15	1.39	2	0.95
September ...	14	1.84	13	1.50	8	1.00
October ...	9	0.81	9	0.69	3	0.51
November ...	8	1.76	9	1.15	3	1.48
December ...	12	6.53	13	5.59	9	5.86
	176	52.08	153	54.84	74	46.69

Highest Rainfall.—Oyster Bay on the 25th January: 3.61.
Solitude on the 25th January: 4.89.
La Ferme on the 23rd April: 3.75.

Agricultural Conditions.—The severe drought experienced since the last months of 1928, lasted until the 25th January. The farmers had practically no plantations on their lands, except some creepers of sweet potatoes and a few manioc plants which had stood the drought. Many inhabitants were suffering from a lack of food since the end of 1928. After consultation with the Magistrate, work was given at the Experimental Station, at daily wages of 50 cents, to men chosen amongst the more needy.

On the 25th January a severe cyclone occurred, damaging the Manioc plantation. The situation of the inhabitants became so acute that Government had to assist the population.

Plantations of maize chiefly were started with at once by the farmers. Some of them having lost their seeds in the cyclone, the Magistrate on the request of the Agr. Superintendent sent a cable to Mauritius and seeds were received in February and distributed to planters.

In February and March (although a cyclone visited the Island in February) the plantations were thriving well and a very good crop was expected.

During the last fortnight of March, a great number of caterpillars attacked the plantations on the west coast of the Island damaging the Maize and destroying the sweet potatoes. The caterpillars extended to the central part of the Island in April. At the end of this month, maize though not quite ripe was obtained.

The condition of grazing in the Cattle Walk was very poor, and water was scarce. The different flocks had to suffer and many animals chiefly the sheep, died during the cyclone.

May to December : In May the farmers were collecting maize.

The crop in the west part of the Island, due to the caterpillars, showed a reduction of about 50%.

In June the caterpillars had spread all over the Island damaging in the east the sweet potatoes and the maize planted at the end of February.

Plantations of Small peas, Beans and Garlic were made and a good yield was obtained. The beans although planted on a smaller scale gave a better yield than in 1928.

The acacia seeds were collected in great quantity and a fair price was paid for; this unfortunately preventing some farmers cultivating their lands properly.

Maize planted in the localities where this foodstuff grows in winter yielded well when reaped in October and November.

The sweet Potatoes which are generally reaped during these two months were not obtained in great quantity, the first plantations having been badly damaged by the caterpillars. The new plantations are doing well.

During the last week of December, heavy rainfall was obtained proving very favourable for Agriculture and allowing plantations to be made at an early date.

The conditions of grazing proved satisfactory.

Experimental Station.—Chiefly the buildings of the Experimental Station were badly damaged by the cyclone of January 25th.

The verandah and part of the roof of the Superintendent's Quarters were blown off.

The kitchen of the Superintendent, the Store Room of the Experimental Station, the bridge at the entrance of the Station and the jetty were broken down.

Part of the roofs of the Overseer's quarters and Office at the Experimental Station and the different fences and gates were badly damaged.

WORK DONE AT THE EXPERIMENTAL STATION

Repairs.—All the damages caused by the cyclone have been completely restored. The Overseer's quarters is being done anew ; the greater part of the timber and boards being spoiled.

Buildings.—A new store at the Experimental Station.
A kitchen for the Agr. Superintendent.
A poultry run.
A pheasant run.
New sties with run for pigs.
A fly trap.
A house for the night watchman of the Experimental Station.

Improvements.—Two demarcation walls were built on the west of the Station. A new orchard has been created north of the Station.

A drain has been dug behind the Superintendent's Quarters, the poultry run and pheasant run.

The pass leading to the jetty has been dredged and extended.

EXPERIMENTS WITH DIFFERENT VARIETIES OF FOODSTUFF.—

The cyclones of January, February and May, and the heavy rainfall of April prevented many plantations being reaped experimentally.

Tannias and Eddoes.

Planted in October 1928. Reaped in November and December, 1929.

Tannias.

Variety	Yield	Yield per acre
Boliza	... 180 lb.	... 6,600 lb.
Yellow	... 112 ,,	... 4,106 ,,
Blanca	... Growth bad	.. Not reaped experimentally
White	... 153 lb.	... 5,610 lb.
Blanche	... 90 ,,	... 3,300 ,,
Priete	... 187 ,,	... 6,856 ,,

Eddoes

Variety	Yield	Yield per acre
Dasheen	... 140 lb.	... 7,700 lb.

This foodstuff is not appreciated by the inhabitants.

Yams

Planted in September 1928. Reaped in August and September, 1929.

Variety	Yield	Yield per acre
Danish ...	... 68 lb.	... 5,610 lb.
Cush ..	... 25 ,,	... 2,062 ,,
Light Red	... 130 ,,	... 10,725 ,,
Bottle Neck	... 153 ,,	... 8,415 ,,
Crops ...	... 138 ,,	... 7,590 ,,
Oriental	... 206 ,,	... 8,497 ,,
Horn ...	... 100 ,,	... 8,250 ,,
Lisbon ...	... 156 ,,	... 8,580 ,,
Sealed Top	... 144 ,,	... 5,940 ,,
Buggle Horn	... 108 ,,	... 5,940 ,,

	Planted in November 1928.	Reaped in September 1929.
Cush-Cush	... 854 lb.	.. 7,828 lb.
Fugue ...	... 450 ,,	... 4,125 ,,

The plantation of this foodstuff experienced the most serious drought until the 25th January when a severe cyclone occurred ; although the plantation had to stand two other cyclones and in April a heavy rainfall, which damaged other plantations, the yield was good.

This foodstuff which keeps in good cooking condition for several months has been largely appreciated by the inhabitants. When reaped in 1928 the tubers were sold with the idea of the farmers growing it, but they ate the yams instead of planting them.

This year, none of the 10 big varieties was sold. Those farmers who had prepared their lands according to the instructions of the Agricultural Superintendent were issued 28 tubers of the above varieties and these were planted under the supervision of the Agricultural Superintendent. (Tubers were issued to 28 farmers who agreed to the above.) The yams planted in different localities are doing well.

Tubers of the two small varieties (Cush-cush and Fugue) were sold to the public and some farmers have grown them.

Every effort is being made to induce the greater number of farmers to grow this resisting and useful foodstuff.

New tubers were received from the Department of Agriculture, Mauritius, on the 15th December and the plantation at the Experimental Station has been extended.

Sweet Potatoes.—Planted in September and October 1928. Could not be reaped experimentally. Part of the plantation died during the drought and from what was left, cuttings were distributed to farmers whose plantations had been destroyed by caterpillars.

Planted in plot H in February.—Reaped June to August.

Variety	Yield	Yield per acre
Turkey claw ...	380 lb	10.450 lb
d'Arifat	311 „	17.105 „
Georgia Jam ...	95 „	5.225 „
Sealy's seedling ...	191 „	10.505 „
Sully	206 „	5.665 „
No. 4	77 „	4.235 „
Egyptian White ...	240 „	13.200 „
Barbados barrel ...	222 „	12.210 „
Pierson	268 „	14.740 „
Egyptian Bebai ...	95 „	5.225 „
T. 4	156 „	8.580 „
Rouge	103 „	5.665 „
Red Bermuda ...	280 „	15.400 „
No. 5	21 „	1.155 „
Jersey	31 „	1.705 „
Blanche	23 „	1.265 „
T. 3	74 „	4.070 „
Joes	249 „	13.695 „
Spooner	216 „	11.880 „

Local Varieties—Planted in Plot F in March—Reaped in August.

Variety	Yield	Yield per acre
Ducray	134lb	3.390lb
Mirbelle	33 „	4.840 „

Pistache.—Planted in Plot F in March—Reaped in July 1929.

Variety	Yield	Yield per acre
Gambia	2lb	330 lb
Virginia Bunch ...	5 „	825 „
Spanish Pea Nut ...	12 „	1.980 „
Virginia Running ...	12 „	1.980 „
Bunch	14 „	2.310 „
Refusque	36 „	2.970 „
Virginia	37 „	3 052½ „
Local	29 „	2.392½ „
Tenessee	5 „	825 „

The varieties Gambia, Virginia Bunch and Tenessee have been damaged by the heavy rainfall.

The same varieties have been replanted in November.

Maize.—Variety Red Flint (Selected). Sown on the 29th January in Plot C. Harvested on the 15th May. Area planted ½ of an acre.

C1. ¼ of an acre. One plant per hole. One and a half feet between rows 3 ft. apart.

Yield	Yield per acre
470 lb.	1.880 lb.

C2. ¼ of an acre. Three plants per hole. 2½ ft. between holes in rows 4 ft. apart.

Yield	Yield per acre
605 lb.	2.420 lb.

There was no difference as to the size of the cobs in both mode of planting.

June 1929

Sown in Plot E. Half plot ¼ of an acre. Could not be reaped experimentally. The plantation having been partly destroyed by the cattle, which had, during a heavy rainfall, one night, broken their fence and entered the Station.

September 1929

Sown in Plot C. Half plot ¼ of an acre. Reaped in December. Cobs kept for seeds.

Variety Local White.—Sown in Plot E. Upper terrace (¼ of an acre). In April 1929. Reaped in July.

Yield 52 lb. Yield per acre 476 lb. The yield was very poor. The heavy rainfall in April destroying part of the plantation.

Sown in Plot G. Upper Terrace ¼ of an acre. In July 1929. Reaped in November. Cobs kept for seeds.

Wheat.—Sown in June in Plot C. 1/7 of an acre. Harvested in November. Yield 120 lb. Yield per acre 840 lb.

Manioc.—Planted in 1928. Destroyed by the cyclone of January 1929. Planted in Plot A in February 1929. The cyclone in May damaged most of the young plants. From those left cuttings were obtained in September and planted in Plot B. Cuttings were also distributed to farmers.

Saffron.—Planted in Plot F in February. Reaped in September. Yield 424 lb. Yield per acre 1,257 lb.

Rhizomes were replanted in November.

Ginger.—Planted in February. Failed. The heavy rainfall occurring in April destroyed part of the plantation.

Onion.—Variety Teneriffe –Seeds received in 1928 were sown, but did not germinate.

Mauritius (local seeds)—Most of the plants obtained from the above were sold and a few planted for seeds.

Orchard.—(Plots I and J)—The mango trees did not bear fruits, having been damaged by the cyclone of Januarv. Only three of them have flowered in October and are bearing fruits.

The letchi layers are not doing well.

Two shaddock trees showing traces of disease were uprooted and burnt. The one which had been treated against the disease was broken down by the cyclone together with one Mandarine and one Bigarade.

New Orchard—The Plants of Bread fruit, Rima, Letchi, Avocado, Bibasse and Longane received from Mauritius have been planted in the new orchard and are doing well.

Pekan nut and Chaulmougra have been planted along sides of Plots A, B, C, & E.

Nursery—(Plot D)—Plants of Filao, Coffee, Tatamaka, Rafia, Mango and Citrus trees were raised, the cyclone damaged many young plants.

Some of the above were sold and the others planted at Solitude and Oyster Bay.

Coconut raised in, were planted at Port South-East.

STOCK FARM

CATTLE

Sindhi.—Birth 2: 1 Calf and 1 Heifer.
Death 3: 1 Bull, 1 Calf, 1 Cow.
Present Number: Bull 3, Cow 2, Heifer 1. Total 6.
Number of services: 19.

The Sindhi Cattle are in good condition, except for the old bull Rajah which shows a weakness in the hindquarters and is unfit for reproduction.

Cows from local breeders are still being received at the Stock Farm and kept until served. From this crossbreeding two very fine specimens were obtained during the year.

Holstein Friesland.—Death: 1 Calf.
Present number: 1 Bull. 2 Heifers.

These animals received in February arrived in very good condition. From the month of May these animals were not doing well, and 1 calf died in June. Since then the two heifers are not improving. The Bull recovered and is in very good condition.

Castration of Cattle, etc.—The use of the pincers received to the above effect has been taught to local breeders. They are very satisfied with the results obtained.

DONKEY

Catalonian.—Birth 7: 2 Jacks, 5 Jennies.
Death: 3 Jennies.
Sold: 1 Jack and 1 Jenny for Rs. 150.
Present number: 7 Jacks, 18 Jennies. Total 25.

The animals are in good condition.

PIG

Large Black.—Birth: 2 Boars, 5 Gilts.
Death: 1 Sow and 1 Gilt.
Given for loan of Boar: 1 young boar.
Sold 4 Sows for Rs. 26.
Present number: 3 Boars and 3 Sows. Total 6.

One boar went on loan to Mr. Allas from 12th March to 2nd May. 18 services were recorded.

Number of services: 51.

Large Black × *Large White.*—Birth: 2 Boars and 2 Gilts.
Sold: 1 Gilt for Rs. 4.
Present Number: 2 Boars and 1 Gilt. Total 3.

Large White.—One boar received from Mauritius on the 22nd February 1929 was sent to Solitude until the 12th May.

Number of services 17.

A fine specimen of a Middle White Sow belonging to a local breeder was kept at the Stock Farm after service, and farrowed 3 boars and 8 Gilts. Of these 1 boar and 1 Gilt remained the property of the Department.

Present number 2 Boars and 1 Sow. Total 3.

The pigs are in good condition, and the crossbreeding with the fine specimens kept at the Stock Farm is largely improving the breed all over the Island.

SHEEP

Nigerian.—Birth 24. 9 Rams and 15 Ewes.
Castrated. 5 Rams.
Death : 1 Ram, 7 Castrated Rams, 20 Ewes.
Sold : 2 Rams, 14 Castrated Rams, 26 Ewes for Rs. 97.
Present number : 7 Rams. 8 Castrated Rams. 20 Ewes. Total 35.

This breed of sheep is not improving. It is only by reducing the price to a minimum that it has been possible to sell some of them.

POULTRY

Black Orpington.— One cock and 5 hens were imported on the 22nd February. Two hens died. All the eggs obtained were found to be not fertile.

Crossbreeding the cock with local hens 12 chickens were obtained.

Present number :—1 cock and 3 hens. 12 chickens. Total 16.

Red Rhode Island.— One cock and 4 hens were imported on the 22nd February. The cock and 1 hen died.

One cock and two hens have been obtained.

Present number 1 cock and 5 hens.

A severe attack of Chicken Pox in October and November caused the death of a certain number of small chickens.

Pheasant.—One cock and three hens were imported on the 19th May. One of the hens died. The eggs laid did not give good results. Four young ones were obtained and died a few days after. Hens are still laying.

PIG RAISING IN A LARGE ENCLOSURE

Mr. P. Allas has started pig raising in the enclosure (40 acres at Anse Quitor) leased to that effect.

During the first months of the year most of the sows farrowed abortively, on account, most probably, of these being fed with acacia seeds.

A change of diet was suggested and some time after the sows farrowed good litters.

The castrated pigs fattened easily. A certain number were sold in December.

FLY TRAP

A fly trap has been erected and is proving rather successful. The cattle flies being scarce in this time of the year, the captures are not very important.

COCONUT PLANTATION AT PORT SOUTH EAST.

A Coconut plantation has been started with at Port South East. To that effect a tree lease has been granted to Ah Wye who has fenced the area.

Coconut plantation leased to Mr. P. Allas.

Several coconut trees at Port Mathurin were damaged by the cyclones.

The young trees at St. François are in good condition. A windbreak of filaos has been established on the exposed side of the plantation.

Coconut have been replanted at Anse Quitor.

Coconut plantation on Sandy Island.

The Coconut trees planted by Mr. Elysée are doing well.

RE-AFFORESTATION.

SOLITUDE

The establishment of the nursery has been completed.

The cyclones did not damage the young trees, the site of the nursery being well protected by a range of hills.

Plantations made :

Eucalyptus	...	...	2,410
Mahogany	...	...	1,652
Badamier	...	...	396
Filaos	...	...	800

Plants in grass pot.

Tatamaka	...	1,500	Badamier	...	1,200
Jack	...	600	Jamrosa	...	250
Mahogany	...	1,500	Eucalyptus	...	2,000
Olive tree	...	400			

Number of Beds

11/3 bois noir, 2 Jack, 1 Latanier, 1 Coffee Robusta, 1 Coffee, 1 Coffee Robusta No. 124, 1 Congoensis, 9 Coffee local, 4 Illipe, 1 Filao, 1 Bois d'Ébène, 1 Jamrosa, ⅓ Bois d'Olive, ½ Bois puant, 8 Arjuna, 1 Terminalia Benjoin, 1¼ Eucalyptus.

A dam has been built on the source and pipes laid to provide water to the nursery.

LA FERME

The cyclones damaged the young plants in the nursery.

Plantations made :

Pomme singe (Imbricaria) ...	5,202	Badamier ...	122
Mango	548	Terminalia Arjuna ...	63
Eucalyptus	529	Filao	2,555

Plants in grass pots

Filao	4,975
Terminalia Arjuna ...	2,000
Jamrosa	6,400

Number of Beds

10 Beds Terminalia Benjoin, 4 Beds Filaos.

Cleaning and recruiting of plantations were done. The trees planted are thriving well.

The new method of planting only trees well established in grass pots is proving very satisfactory.

MANILLA

The plants had to suffer from the drought. A certain number were damaged by the cyclones.

The plantation at Solitude has been extended and 800 cuttings planted at Mont Lubin.

The collecting of pods has started in September and the vanilla is being cured by boiling water process. The result is satisfactory.

In February and June 2,100 pods weighing 8 kgs. 135 grs. were shipped to Mauritius.

COFFEE

From the 2,000 plants of coffee in grass pots in the nursery at Oyster Bay only 350 were saved. The cyclone damaging the young plants.

From these 202 were distributed to 18 farmers. If these have been properly upkept more plants will be issued to them next year.

To that effect 9 beds of Coffee (Seeds obtained at Solitude) have been sown.

Seeds of Robusta, Robusta No. 124, and Congoensis were received from Mauritius and sown at Solitude.

The plants of local Coffee at Solitude, although having suffered from the cyclones gave a good yield.

The other varieties did not bear any berries.

TREES RECEIVED FROM MAURITIUS

55	Araucaria Cunninghamii	4	Spondias dulcis
2	Ravinsara	20	Jonesia declinata
20	Chrysobalanus Icaco	20	Moreton bay chestnut
40	Camphor seedlings	4	Bancoulier
12	Taraktogenos Kurzii	2	Nephelium longan
16	Artocarpus incisa	12	Persea gratissima
16	„ (Sp. Rima)	10	Nephelium litchi
18	Hicoria Pecan	12	Bombax edulis
12	Carica Papaya	12	Eugenia caryophyllata
12	Eriobotrya Japonica	12	Anona squamosa
24	Eriodendron anfractuosum	24	„ reticulata
3	Passiflora laurifloria	3	Passiflora edulis
3	„ quadrangularis	3	„ Sp.

Part of these have been planted at Oyster Bay, Solitude and La Ferme. What was left has been distributed as follows :—

7 Letchi layers. 8 Bread fruit. 5 Rima. 4 Avocado. 6 Bibasse. 7 Cœur de Bœuf. 4 Attier. 2 Kapok. 1 Fruit de Cythere. 1 Chaulmoogra to 22 persons.

SALE OF FOREST PRODUCTS

Forest Products .. .. Rs. 1,442.65

FROM EXPERIMENTAL STATION

Sheep	Rs. 97.00	Sold in Mauritius ...	Rs. 25.00
Pigs	30.00	Donkeys	150.00
Timber	28.21	Rent of land	60.00
Seizure fee	1.30	Filaos from nurseries ...	7.68
Manioc	21.63	Trees received from Mauritius	24.55
Maize	.72	Maize „ „	13.68
Sweet Potato	4.00	Eggs (not fertile) ...	3.04
Coffee	1.25	Yams	4.65
Saffron	3.24	Pistache	2.73
Vegetable seeds ...	3.25		

In the above figures is not mentioned vanilla shipped and sold in Mauritius.

LAND TENURE

From 1st January to 31st December, 161 applications were received for 195 agr. acres, 16 acres tree lease, 22 cattle posts, 2 fishing posts, 13 shop sites and 32 residences.

From the above 58 leases were signed for 17 agr. acres, 13 tree leases, 12 cattle posts, 1 fishing post, 10 shop sites and 10 residences.

68 were not taken by applicant and 35 were refused.

EXPORTS

Acacia seeds ...	9,829 bags	Salt Fish ...	3,354 bales
Beans ...	254 „	Cuttle fish ...	619 „
Garlic ...	270 „	Goats ...	2,182
Tobacco ...	493 „	Sheep ...	594
Manure ...	24,345 „	Pigs ...	1,200
		Cattle ...	305

TREFLES CO-OPERATIVE CREDIT SOCIETIES

Three loans amounting to Rs. 111.50 in capital and interest were paid in.

Rs. 12 interests were received for loans whose dates of payment have been extended.

7 Applications for loans amounting to Rs 280 were granted by the Committee.

Cash in bank and in hand 31/12/28 ...	Rs. 166.16
Receipts	143.50
	309 66
Expenses	300.00
Cash in Bank	9.66

Artus Mercure, a partner of the Society died and his share was transferred to his widow.

AGRICULTURAL SOCIETY

Three meetings of the above society were held, chiefly in connection with the Prize Holding Scheme. For the judging of the lands the jury was appointed by the members of the Society.

PRIZE HOLDING SCHEME

Number of Entries: 64.

Group I

Class I		Class II	
1st Prize ...	Rs. 25—Joseph Grancour.	1st Prize ...	Rs. 18—Wow Lamvohee.
2nd „ ...	Rs. 15—Mrs. L. Albert.	2nd „ ...	Rs. 10—Pierre Albert.

Group II

1st Prize ...	Rs. 25—Julius Meunier.	1st Prize ...	Rs. 18—Joseph Bandhoo.
2nd „ ...	Rs. 15—Lewison Roussety	2nd „ ...	Rs. 10—Fakeer Goolam.

Group III

1st Prize ...	Rs. 25—Elmire Agathe.	1st Prize ...	Rs. 18—Volny Gaspard.
2nd „ ...	Rs. 15—David Albert.	2nd „ ...	Rs. 10—Delval Gontran.

Group IV

1st Prize ...	Rs. 25—Henri Mercure.	1st Prize ...	Rs. 18—Jocelyn Azie.
2nd „ ...	Rs. 15—Nelrose Perrine.	2nd „ ...	Rs. 10—Sylvestre Perrine.

The holding of this scheme has proved very successful. Efforts have been made by many planters to make better cultivation.

Motor for boat.

A new Motor Johnsone was received from Mauritius.

Visits of Inspection.

His Excellency the Governor visited the Experimental Station and Stock Farm on the 21st May. The Agricultural Superintendent being sick, was unable to be present.

The Chief Agricultural Officer and the Director of Forests visited the Island in December.

BOARD OF AGRICULTURE

The Board of Agriculture established under Ordinance 30 of 1912 consists of :—
His Excellency the Governor, President.
The Director of Agriculture, Vice-President.
The following members were appointed in 1929 :—

The Honourable L. Espitalier Noël
,, P. Raffray
,, R. Gujadhur
,, M. Martin, C.B.E.
,, Captain H. G. Hitchcock, M.B.E.
J. A. Duclos Esquire, K.C., C.M.G.,
G. Antelme Esquire,
G. Clarenc Esquire,
J. de Spéville Esquire,
L. H. de Froberville Esquire,
H. G. Ducray Esquire,
E. Rouillard Esquire,
Gabriel Régnard Esquire,
F. A. Nichols Esquire,
Pundit Boleram Mookteram
Pierre de Sornay Esquire,
P. Montocchio Esquire
G. Mayer Esquire.

The Honourable P. Raffray left the Colony and was replaced by Mr. Jules Leclézio.
During the year 1929, there was one meeting of the Board held on June 7th.
At this meeting the following question was discussed :—
Rice Cultivation in Mauritius.

PUBLICATIONS

The following publications were issued during the year :—

Bulletins

(*a*) Le Surra à Maurice et son principal Vecteur " Stomoxys Nigra."
(*b*) La Teigne du Tabac : Phthorimaea Operculella.
(*c*) The Growth of the Sugar Cane under Mauritius Conditions as described by the Logistic Curve and as expressed in terms of Temperature and Soil Moisture.

Leaflets

(*a*) Le Thrips de l'Oignon—Thrips Tabaci, Lindeman.
(*b*) Méthode officielle d'Analyse mécanique de terre.

The following reports were prepared and submitted to the Council of Government and to the Board of Agriculture :—

Annual Report of the Department of Agriculture for 1928.

Report on Co-Operative Credit Societies to 30.6.1929.

Report on the operations for the Control of Phytalus Smithi (Arrow) during the season 1928–29.

The following reports were also published :—

Report from Mr. G. Corbett, Tobacco Officer, on his mission to South Africa.

Report on Mr. Lesur's mission to Hawaii in connection with Irrigation.

The following articles from Officers of this Department were published in the Revue Agricole :—

Les Chèvres ... ... D. d'Emmerez de Charmoy
Remarques à propos de certaines opinions émises dans un article de Mr. A. de Villèle ... ... E. F. S. Shepherd
Notes supplémentaires sur le Pokkah Boeng et autres affections similaires de la canne à Maurice ... ... ,,
Production Sucrière ... ... M. Kœnig
La croissance des Cannes à Maurice exprimée en termes de l'humidité du sol et de la température de l'air ... ,,
L'assimilabilité de la potasse dans un sol type de Maurice... N. Craig & R. Lincoln
La Canne à Sucre est encore indemne de Mosaïque à Maurice ... ... L. Baissac
La combustion de la Bagasse ... ... R. Avice
Réponse à M. de Villèle ... ... G. Orian
Les Maladies de la Canne à Maurice ... ... ,,
La Culture de l'Hortensia ... ... P. Halais

LEGISLATION

The following Ordinances and Proclamation were issued during the year :—

Ordinance No. 20 of 1929.—To validate a resolution passed by the Council of Government increasing the excise duty on Tobacco. (Tobacco Excise Duty—Validation).

Ordinance No. 22 of 1929—To amend the Tobacco Ordinance 1927.

Proclamation No. 43 of 1929—To remit Stamp Duties and Registration Fees chargeable on instruments executed by or on behalf of " Crève Cœur " Co-Operative Credit Society.

EXPENDITURE AND RECEIPTS

The expenditure of the Department has been as follows :—

	Rs. cs.
Personal Emoluments	112,386.85
Maintenance of Gardens	12,840.46
General Services	1,847.81
Prevention of Plant Pests and Diseases	2,072.67
Prevention of Animal Diseases	2,233.96
Upkeep of Stock	3,134.69
Subvention to Société Horticole	1,000.00
Travelling Expenses...	9,534.18
Miscellaneous Expenses, C. C. Societies	20.62
Maintenance of Experiment Stations	12,518.92
Minor Industries	18,769.06
Apparatus and Chemicals	1,673.57
Nursery for Economic Plants	3,116.67
Destruction of Phytalus Smithi	121,963.87
Agricultural Instruction	224.00
Upkeep of Plantation at Floreal...	220.24
Dairy { Capital Expenditure	34,694.30
Dairy { Upkeep Expenses	35,778.00
Services rendered by the Railways	17,068.33
Contribution to "La Revue Agricole"	500.00
Rental of Telephones	507.56
Expenses Farm School	4,458.26
Registration of Chemists	5.00
Engine for Experimental Cane Crushing Mill ...	83.18
British Industries Fair	45.32
The receipts were :—	
Sale of flowers and plants	4,662.92
Sale of Stock	311.00
Services to animals	60.00
Sale of eggs and poultry	17.87
Sale of Milk, Cattle Station	524.87
Sale of Canes	2,201.49
Analytical Fees	458.00
Miscellaneous	1,703.00
Sale of Tobacco leaves	2,744.72
Sale of Cuttings, Seeds etc., ...	118.38
Contribution, C. Credit Societies	1,280.00
Veterinary Fees (Customs)	949.00
Destruction of Phytalus Smithi	55,567.26
Loans repaid by C. Credit Societies	1,340.00
Interest on Loans	219.20
Rent of Crown Lands at La Ferme and St. Martin ...	128.30
Rent of Crown Lands (Tea Plantation)	750.00
Sale of Produce, Experimental Dairy	27,146.06
Sale of B. C. G. Vaccine	505.00
Sale of Soamin	252.00

GENERAL.

The Director of Agriculture served as a Nominated Member of the Council of Government, as a Member of the Customs Tariff Advisory Board, The Forest Board, the Board of the Mauritius Institute and the Advisory Committee on Fisheries, as President of the Technical Committee of the Mauritius Sugar Industry Conference as well as serving as Chairman of a number of Committees of the Board of Agriculture dealing with various subjects.

D. d'EMMEREZ DE CHARMOY,
Director of Agriculture.

July 30th, 1930.

APPENDIX I.

Stations / Months	Réduit						Curepipe					Beau Bassin					Abercrombie		Pamplemousses	
	Temperature			Relative Humidity	Rainfall		Temperature		Relative Humidity	Rainfall		Temperature		Relative Humidity	Rainfall		Rainfall		Rainfall	
	Max.	Min.	Mean		Depth of rain	No. of days	Max.	Min.		Depth of rain	No. of days	Max.	Min.		Depth of rain	No. of days	Depth of rain	No. of days	Depth of rain	No. of days
	°C	°C	°C	%	m/m		°C	°C	%	m/m		°C	°C	%	m/m		m/m		m/m	
January	27.7	21.1	23.8	79.5	210.1	15	23.6	19.3	89.9	523.0	27	29.3	22.0	73.2	98.7	13	117.0	5	287.0	15
February	28.3	21.5	24.3	74.9	158.0	14	24.4	20.1	86.4	491.9	24	29.6	22.0	70.0	53.8	9	68.5	6	106.7	16
March	28.2	20.5	23.7	71.8	88.2	15	24.2	19.6	84.2	185.0	29	30.1	21.4	67.8	61.7	7	109.6	8	94.2	15
April	26.1	20.1	22.6	82.0	451.2	23	22.0	18.5	93.6	913.0	30	27.1	22.0	80.4	291 5	15	322.8	18	425 0	25
May	23.9	17.7	20.4	81.2	136.2	18	20.4	16.9	89.4	578.0	29	26.0	18.8	79.9	151.4	9	178.7	15	213.0	14
June	22.9	14.1	18.0	80.9	35.7	15	18.7	13.8	87.7	162.5	26	24.1	16.1	80.0	12.0	4	17.3	5	67.3	13
July	21.7	14.0	17.2	81.6	77.7	16	17.8	13.9	88.4	275.2	31	23.4	15.6	78.0	35.5	10	49.6	14	104.8	22
August	22.0	14.4	17.6	78.7	58.9	19	17.5	12.9	90.6	245.5	30	23.8	15.5	79.0	52.0	7	35.8	16	86.8	24
September	22.6	14.8	18.1	72.1	30.5	13	17.9	14.1	85.9	252.0	30	24.1	16.5	73.0	10.8	2	12.6	8	32.5	14
October	24.9	15.5	19.7	69.9	37.5	9	20.2	15.1	83.1	110.2	25	26.1	16.7	69.7	42.0	4	16.6	11	29.2	8
November	27.3	17.3	21.8	66.3	12.2	6	22.5	17.0	79.5	33.0	16	28.4	18.1	70.5	11.0	2	7.3	3	16.5	9
December	27.2	19.9	22.9	80.4	760.0	25	23.4	18.9	88.1	1,085.5	27	28.9	20.4	78.0	480.7	18	580.0	22	680.0	23
Year	25.2	17.6	20.8	76.6	2,056.2	188	21.05	16.7	87.2	4,854.8	324	26.7	18.8	75.0	1,301.1	100	1,515.8	131	2,143.0	198
					Total					Total					Total				Total	

REMARK:—The figures for relative humidity are the means of figures obtained from daily readings of Dry and Wet Bulb thermometers at 9h. and 15h. Temperature figures at Réduit, are obtained from hourly measurements of thermograms standardised daily at 6h., 9h. and 15h. At the Stations Maximum and Minimum Thermometers are read daily at 9h. and 15h.

APPENDIX II.

GOVERNMENT DAIRY, CUREPIPE. RETURN OF MILK YIELD DURING THE YEAR 1929.

MONTHS	Hilda	Bet II	Réduit	Violet I	Candos	Rose Belle	Rose II	Géranium II	Cédara I	Mauricia	Pretoria II	Pretoria I	Mahebourg	Elsa	Flacq	Eva	Bet I	Katrina	Violet II	Narcissus II	Daisy I	Tulip	Nora	Clara	Geranium I	Narcissus 2/1	Elsenburg	Aster III	St. Pierre	Thora	Princess I	Princess V	Mt. Blanche I	Charlotte II	Charlotte I
January ...	218½	93½	177	274	69	48	67½	177	70½	512½	135½	137	53	478	119	409½	119½	56	76	72	228	155⅓	268	124	261½	200	240⅔	150	206	22	418½	48½	253½	114	70½
February ...	182½	79½	153½	213½	65½	219½	70½	133½	76½	421	87½	105½	34	416	108½	238	115	42½	64	13	182⅔	98⅓	234	86	203½	185⅓	210	128½	182½	...	380½	75	222	101	311½
March ...	193	80½	152½	213½	63½	262½	66½	148½	96½	402	66	85½	22	360½	125	341	128½	11	71	...	187	82	237	76⅔	178	211⅓	212	129	190	...	419	135	258	112	283½
April ...	167	70½	54	173	55½	209	65	154	88½	352	7	59½	...	334½	107	317	83	...	39	...	165⅓	69⅔	203½	58⅓	145½	174	174½	90	171	...	372½	101	211⅓	74½	215
May ...	153	61	...	143	45½	194	67½	167	84	368	...	50½	...	348	91½	317	48½	...	...	...	155⅓	58	180	47⅔	93	148	161⅔	89	166⅓	...	356⅔	81⅓	139	31½	183
June ...	126	43	...	97½	25	160½	56½	142	70	305½	260	10½	.	341	78	261⅓	...	...	...	...	108⅔	15⅓	141½	32	67½	126½	124	30	130⅓	...	323½	73½	...	..	142
July ...	118	25½	...	80	...	141½	64	101	76	109	341	...	...	349	77	246½	...	...	...	...	112	...	137	6	60	113⅔	101	...	122	...	327	76½	...	...	117½
August ...	111	...	73	69	...	132	61½	16½	71	...	256½	...	...	320	65½	223½	320½	...	...	...	99	...	119½	...	45	89½	5	...	100⅓	...	295	77	...	...	84½
September ...	101½	...	321	55½	...	123	49	...	66	...	286	...	...	299	19	196	375⅔	...	...	...	88	...	99	...	23½	64⅔	210	...	85½	...	268	63	355½	489	61
October ...	111	...	412½	40	...	57	...	...	61½	...	161	205½	..	315½	...	196½	380	...	...	...	88⅓	...	91½	...	...	50⅔	361	223	81	...	284	63	332	436½	40½
November ...	103	...	332	20	...	...	...	110	59	533	129	159	...	291	...	185	301	...	...	...	116	...	91	...	...	51	337	369	73	...	279	60	277	339	...
December ...	102	...	308	...	...	...	...	497	...	533	99	119	...	292	...	184	306	...	...	...	245	...	86	...	...	13	331	320	65	...	288	...	252	305	20
	1,686½	453½	1,983½	1,379	324	1,547	568	1,646½	819½	3,536	1,828½	932	109	1,147½	790½	3,115½	2,186½	109½	250	85	1,805½	479	1,888	130½	1,077⅓	1,433½	2,467½	1,528½	1,573⅓	22	4,011½	854	2,300⅓	2,002½	1,529

APPENDIX II.—(*Continued*)

MONTHS	Géranium III	Pretoria III	Triolet	Bianca I	Daisy II	Médine	Princess II	Blanchette	Alerte	Nerveuse	Bruyante	Majestueuse	Abordante	Pétulante	Favorite	Altière	Paresseuse	Laborieuse	Belliqueuse	Vaillante	Docile	Maraudeuse	Mignonne	Féconde	Shamrock II	Malicieuse	Bet III	Neigeuse	Violet 2/1	M. Blanche II	Daisy 2/1	Larkspur	Capricieuse	Narcissus 2/2	Total
January ...	76½	247	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6,447
February ...	225	215½	94	341½	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6,316½
March ...	273	226½	261½	413½	300	151½	111½	125	103	94½	58½	51½	165	81½	149	53½	29	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8,248
April ...	194½	183½	263½	398½	395½	327	360	190	160½	151½	104	81	275	124	252½	97	15½	251½	150	129	88	...	...	...	...	...	...	...	...	...	...	...	...	...	8,754
May ...	178½	141½	252	401½	395½	340½	355	201½	169	141	122¼	89½	287	124	233	118½	...	331	141	254½	250	63½	...	...	...	...	...	...	...	...	...	...	...	...	8,625½
June ...	172	140½	239½	349½	357½	317½	332½	184½	146	117½	99	63½	266	110	165	95½	...	280½	107	222	211½	139	164⅓	117	155½	12	135	...	...	...	...	...	...	...	7,995
July ...	180½	138	256½	356	365	323	328	187	138	113½	104½	31	265½	115	140	98	...	269½	104½	228	302	108½	307	230	367	65½	370½	214	...	...	...	...	...	...	8,607
August ...	165	121½	254	346	343	306	282	190½	127	99½	91½	...	256½	109	104½	80½	...	255½	88	221	220½	90	288	287	364	63	359	265½	62	..	...	...	...	...	8,084
September ...	90	115	243	347	338	238½	264½	182½	109½	91½	92	..	241½	106	63	70	...	234½	79½	216½	208⅔	80	210	267	330	62	313½	249	280	197	...	...	...	...	9,018
October ...	2	90	226	353	356½	240½	260½	180	103	92	95	...	237½	111	...	50½	...	247½	67½	230½	214½	92½	265	277	331	57½	340	182½	293	268	...	...	...	...	9,262
November ...	...	76	241	353	330	258	244	164	96	84	86	...	239	106	...	...	...	236	59	226	204	86	127	269	317	54	335	220	284	212	...	...	...	...	9,150
December ...	97	58	220	330	310	257	227	151	97	84	87	5	237	103	...	...	...	238	40	236	220	84	100	278	291	40	320	183	292	209	103	88	55	68	9,536
	1,654	1,756	2,551	3,989½	3,491	2,759½	2,765	1,762	1,219	1,069	940	381½	2,170	1,089½	1,107	663½	44½	2,314	836½	1,963½	1,919	743½	1,461⅓	1,725	2,155½	354	2,173	1,314	1,211	886	103	88	55	68	100,043

APPENDIX III.

Distribution of Sugar Cane Diseases in Mauritius in 1929.

District	Red Rot	Pineapple disease	Smut	Root disease	Streak	Helminthosporium leaf spot. (Heavy attacks of)
Pamplemousses	One Estate (chiefly D. K. 74)	None reported	Five Estates chiefly on D. K./74, M. 131, R.P. 8, and Striped D/109	One Estate D/109	None reported	One Estate M. 1823
Rivière du Rempart	One Estate D. K./74	None reported	One Estate M. 131	None reported	Two Estates R. P. 8	None reported
Flacq ...	Two Estates (chiefly D. K./74, also on M. 55/453, 3522, 422, 1318, 2217, 2019, 2617 and 2916)	None reported	One Estate D/109 and M. 131	One Estate M. 55	None reported	One Estate M. 3322, 3219, 2417, 3522, 2217, 55/453 and B. 6308
Black River	None reported	None reported	Two Estates W. Tanna and D. K./74	None reported	None reported	None reported
Grand Port ...	One Estate D. K./74, M. 131 chiefly	Two Estates P. O. J. 213 and Various	One Estate chiefly D. K./74, also on R. P. 6, 55/1182, M. 2417, 1718 and 3319	One Estate P. O. J. 213	None reported	None reported
Savanne ...	One Estate D. K./74	None reported	None reported	None reported	None reported	None reported
Moka ...	None reported	None reported	None reported	None reported	None reported	Two Estates M. 53/26 and D/109
Plaines Wilhems	None reported	None reported	One Estate W. Tanna and M. 131	None reported	None reported	None reported

N.B.—The following diseases were reported from all the districts :—Gumming, Leaf Scald Pokkah-boeng, Rotting of inflorescence and Bunch-Top.

APPENDIX IV.—(a)

1st Crop 1929.

RESULTS OF TOBACCO TRIALS

Royal Botanical Gardens.

Varieties	Area planted	Yield per acre
Joiner	... .347 acre	496.7 Ks.
Yellow Pryor	... 9570 sq. ft.	475.1 „
Blue Pryor	... 9570 „ „	498.9 „
Constant	...600 plants 3′x3′ in cane rows	315.9 „
Yellow Bourbon	...300 plants 3′x3′ in cane rows	340.2 „
	Barkly Experiment Station.	
Gold Leaf	...3095 plants 3′x3′	204.7 Ks.
Hickory Pryor	...2863 plants 3′x3′	81.8 „
*Yellow Pryor	...4972 plants 3′x3′	267.3 „
Cross Yellow Pryor Yellow B	... 2980 sq. ft.	164.1 „
Constant	... 16974 „ „	339.3 „

*Badly attacked by diseases.

Mouna Experiment Station

Blue Pryor ...	... 7,446 Square feet	...	76.0 Kilos
*Gold Leaf ...	... 20,650 „	...	91.5 „
Yellow Pryor ...	... 9,450 „	...	139.6 „
Hickory Pryor	... 4,482 „	...	323.9 „
Gold Leaf A ...	... 3,200 „	...	416.5 „
„ B ...	... 7,900 „	...	219.8 „
„ C ...	... 26,000 „	...	333.1 „
Blue Pryor A ...	... 12,000 „	...	111.8 „
„ B ...	... 10,400 „	...	121.7 „
Hickory Pryor A	... 6,700 „	...	382.2 „
„ B	... 12,400 „	...	280.0 „
Yellow Pryor A	... 3,600 „	...	607.7 „
„ B	... 2,125 „	...	314.2 „
Constant A ...	... 4,500 „	...	511.2 „
„ B ...	... 9,300 „	...	424.3 „

2nd Crop 1929

Royal Botanical Gardens.

* Hickory Pryor	... 11,900 sq. ft.	172.4 Ks.
*Blue Pryor	... 8,774 „ „	68.8 „
*Joiner ...	... 8,774 „ „	134.9 „

Barkly Experiment Station.

Amarello ...	... 9,508 sq. ft.	239.7 Ks.
Gold leaf ...	... 342 „ „	141.3 „
*Blue Pryor	... 24,596 „ „	51.9 „
*Hickory Pryor	... 83,506 „ „	95.6 „
*Yellow Pryor	... 21,241 „ „	65.8 „
Blue B ...	... 16,650 „ „	352.8 „

Mouna Experiment Station.

*Gold leaf ...	... 28,500 sq. ft.	31.0 Ks.
*Yellow Pryor	... 26,400 „ „	66.9 „
*Hickory Pryor	... 19,100 „ „	51.3 „
*Blue Pryor	... 18,125 „ „	2.3 „

*BADLY ATTACKED BY DISEASES

APPENDIX IV(b)

CUSTOMS AND EXCISE DUTIES ON TOBACCO

	Year 1926	February 1928			October 1930		
	Duty From To per kilo	Duty From To per kilo	*Excise Tax per kilo	Total Duty & Tax	Duty From To per kilo	*Excise From To per kilo	Total Duty & Tax
	Rs. Rs.	Rs. Rs.	Rs.	Rs.	Rs. Rs.	Rs. Rs.	Rs.
Leaf unbutted and unstemmed...	2.40—5.50	2.40— 5.50	...	6.50	5.50— 6.50	...	8.50
Leaf butted and stemmed...	3.00—6.50	3.00— 6.50	...	7.50	6.50— 7.50	...	9.50
Manufactured Tobacco ...	6.00—8.00	8.00— 8.50	1	8.50	8.50— 9.50	1—2	9.50
Manufactured Cigarettes...	7.50 - 9.50	9.50—10 00	1	10.00	10.00—11.00	1—2	11.00

*Excise tax is only imposed on locally manufactured tobacco and cigarettes.

APPENDIX IV(c)

TOBACCO IMPORTS

Years	Cigars and Cigarettes Kilos	Yearly	Manufactured Tobacco Kilos	Yearly	Unmanufactured Kilos	Yearly
—	—	—	—	—	—	—
1920	78,473	...	148,446	...	2,104	
1921	45,532	− 32,941	166,565½	+ 18,119½	2,223	+ 119
1922	98,505	+ 52,973	199.989	+ 33,424	10	− 2,213
1923	84,513	− 13,992	163,527	− 36,462	1,356	+ 1,346
1924	156,792	+ 72,279	157.938	− 5,589	2,293	+ 937
1925	127,314	− 29,478	132,775	− 25,163	1,032	− 1,261
1926	95,373	− 31,941	84,223	− 48,552	55,539	+ 54,507
1927	64,752	− 30,621	61,055	− 23,168	57,344	+ 1,805
1928	44,670	− 20,082	10,795	− 50,260	12,822	− 44,522
1929	35,248	− 9,422	10,555	− 240	19,767	+ 6,945

Years		Total Imports Kilos	
1920	...	229,023	
1921	...	214,320½	− 14,702½
1922	...	298,504	+ 84,183½
1923	...	294,396	− 49,108
1924	...	317,023	+ 67,627
1925	...	261,121	− 55,902
1926	...	235,135	− 25,986
1927	...	183,151	− 51,984
1928	...	68,287	−114,864
1929	...	65,570	− 2,717

APPENDIX IV_(a)